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JOURNAL OF THE ASIATIC SOCIETY.

No. I. 1864.

On the history of the Burmah Race.—By Lieut.-Colonel A. P. PHAYRE, C. B., Chief Commissioner of British Burmah.

The Chronicles of the Kings of Burma, called *Maha Radza Weng* are preserved with great care. Some years ago, the present writer was presented by the king of Burma with a complete copy of this national work. His Majesty is himself a man of learning, and the edition from which the information now presented is derived, appears to have been compiled under his direction with careful research. Supposed errors of former editions are pointed out, and original authorities are in such cases quoted. All that part of the history, which refers to cosmogony, and the dynasties of kings in India, is derived from Pali books, and has no more real connection with Burmese history, than the Hebrew annals have with British history. The object of the present paper is to make an epitome of the Burmese narrative, presenting only an outline of the main facts, yet omitting nothing which is necessary to be known to understand the history of the Burmese race as written by themselves.

The *Maha Radza Weng* commences with describing the self-development of the world, and the appearance of man therein. The system of cosmogony has, together with the Buddhist philosophy and religion, been derived from India, and the Burmese kings profess to trace their descent from the Buddhist kings of *Kappilawot* of the *Sakya* tribe, to which race *Gautama Budha* belonged. The history contains the Buddhist account of the first formation of human society; the election of a king, and the grant to him of a share of the produce of the soil. These legends constitute to this day the foundation of the authority.

temporal and spiritual, of the Burmese kings. The foundation of that authority they continually refer to, and it is ever present to the minds of their subjects. It is proper therefore briefly to record that portion of the national history.

The history opens with announcing that after a cycle of the great revolutions of the universe, wherein worlds are destroyed by fire, by water, and by air, had elapsed, the present earth emerged from a deluge. A delicious substance like the ambrosia of the gods was left by the subsiding water, spread over the earth. The throne of Gautama first appeared above the water. At the same time, the beings called *Brahma*, who live in the upper world or heavenly regions, had accomplished their destinies. They then changed their state, and became beings with corporeal frames, but without sex.* Their bodies shone with their own light, and full of joy they soared like birds in the expanse of heaven. From eating of the ambrosia, the light of the bodies of these beings gradually declined, and because of the darkness, they became sore afraid. Because of the glory of those beings, and because also of the eternally established order of nature, the sun, of gold within and glass without, fifty *goodzanas*† in diameter, and one hundred and fifty in circumference, appeared above the great Eastern island, (of the solar system,) and threw forth his light. The inhabitants of the world were then relieved from fear and called the sun (in Pali) *Thoo-ree-ya*.

In like manner the first appearance of the moon and stars is described, the central mount Myenmo (Meru,) and the whole sekya or solar system. The history then proceeds :—

“Of the world’s first inhabitants, some were handsome, some not handsome. As the handsome ones despised the others, in consequence of the haughty evil thoughts thus engendered, the ambrosia of the earth disappeared, and they ate of the crust of the earth. Then in process of time selfishness and desire increasing, the earth’s surface crust disappeared. They then ate of a sweet creeping plant; when that disappeared, the *Thalay* rice came up, which as they gathered, it was renewed morning and evening. Placing it in a stone jar, flames

* It is from these beings that the people called by Europeans *Burmas*, *Burmans* or *Burmese* take their name. In the Burmese language the name is written *Mran-má* or *Mran-ma* and is generally pronounced by themselves *Bu-má*. See note at the end.

† A modern *goodzana* equals about thirteen English miles.

issued, and it was prepared for food. Its flavour was whatever the eater desired. From eating of this food, human passions were developed, and the beings became men and women. Then as evil deeds began to prevail, the wise censured and severely treated the others. The latter wishing to hide their evil deeds built houses. Then the lazy among them having stored up the food, the *Thalay* rice acquired husk, with a coating of coarse and fine bran, and where it once had appeared, it did not sprout again. They then said,—“It is good for us to divide among us the *Thalay* rice plants, to possess each his own.” Then they distributed the *Thalay* rice plants. After that, an unprincipled one among them, fearing that his own share would not suffice, stole the share of another. Once and twice he was warned; in the third offence, he was beaten. From that time theft, falsehood and punishment existed.”

The world's first inhabitants then assembled and thus consulted together: “Now wicked times have come; therefore let us select an upright religious man, one having the name and authority of a ruler, to reprove those who deserve reproof, and to expel those who deserve to be expelled, and let us give him a tenth share of our *Thalay* rice.” This was agreed to, and an excellent man, full of glory and authority, the embryo of our *Gautama Phra*, being entreated to save them, was elected king, and was called *Mahá-tha-ma-dá*. In verse, it is sung that he was of pure nature, of exalted authority, and of the race of the sun.

“Like a second sun, he dispelled darkness or ignorance; his good qualities shone as the light, and from his power and authority, and from being the first of kings in acts of great diligence, he is called *Manoo*.* After this, men of wisdom who desired to destroy wickedness, lived in huts in the forest, and ate only what they received in charity; they were called *Brahmans*. Others tilled the ground and traded; they were called wealthy men and merchants. The rest being poor persons in humble employments were called *Soodras*, or poor people. Such were the four classes of men.†”

This history represents king *Maha-tha-ma-dá* as reigning for an

* The word appears to mean generally lawgiver or king. The word is Indian not Burman.

† Among the four classes, it will be observed that the ruling power is placed first according to the Buddhist system. The *Brahmans* appear as literati and ascetics.

athen-khye, being a period represented by a unit and one hundred and forty cyphers. He had twenty-eight successors who reigned in the countries of *Malla* and *Kothu wattee*. The next dynasty which numbered fifty-six kings reigned in *Ayooz-za-poora*. The next of sixty kings reigned in *Bara-na-thee* or Benares. Then eighty-four thousand kings reigned in *Kap-pi-la* the native country of Gautama, in distant after times. Next thirty-six kings reigned in *Hat-li-poora*. Numerous other dynasties are mentioned which are represented as established in various countries of India, and as lasting for many millions of years.

The first king after *Maha-tha-ma-dá* whose history is brought in as directly connected with subsequent events, is *Auk-ká-kareet* king of *Bara-na-thee* or Benares. It is related that this king had five queens. The eldest named *Hat-ta* had four sons and five daughters. Having given birth to these children *Hat-ta* died. The king then married a young Princess who gave birth to a son named *Dzandoo*. The king highly pleased, promised to confer any favour on the young queen which she might ask. Prompted by her own kindred, she asked that her son might be declared heir to the throne. After much entreaty, the king consented, and calling his sons and daughters, gave them a retinue of followers, with elephants and horses, and they went forth to establish a country, and search for a place to build a city.

At this time the embryo of *Gautama Phra*, a wealthy *Kap-pi-la Brahman*, having abandoned his house, had become a hermit in a teak forest* in the Himalaya jungles or mountains. In the *Rad-za-Weng-gyee*, it is called an *Eu-gyee* forest. There the hermit had built his lodge. The Princes came to the place in search of a site for a city. The hermit foresaw that a city built there, would, in after time, be of great fame in *Dzam-bu-dee-pa*, the world of man, and advised them to build their city there and to call it *Kap-pi-la-wot*.† Then the Princes consulted together saying "There are with us no king's daughters of our own race, nor are there any king's sons for our sisters; if marriages are made with other races the children become impure; in order to preserve our race, let us put aside our eldest sister as a mother,‡ and we four marry our four younger sisters." It was done so. From that

* The national chronicler discusses whether the forest in question consisted of Sal or of Teak trees. He finally decides in favour of the teak as the more dignified tree of the two, but appears to have come to a wrong conclusion.

† This appears to signify "the *Kap-pi-la Brahman's* place of religious duty.

‡ In Burma to this day the king's eldest daughter is not given in marriage, but remains unmarried at least during the life of her parents.

time the race became known as the *Tha-kyā-tha-kee* race of *Kap-pi-la-wot*.

Regarding the origin of the *Kau-le-yá* Princes, the elder of these four brothers named *Auk-ka-mok-kha*, and the others, had put aside their elder sister *Pee-yá* as a mother. She was afflicted with leprosy, or a similar disease, and they determined to place her apart in a secluded spot. They had her conveyed to a cave with a dwelling covered by branches of trees, and she was left there. At that time, in *Bara-na-thee*, there reigned *Ráma*, the son of *Brah-ma-dat*. He being afflicted with leprosy, gave over his kingdom to his eldest son, and went into the forest in search of herbs to cure himself. He established himself in a hollow tree, and before long, was by the use of herbs restored to health. Not far from this, was the place where the Princess *Pee-yá* was shut up. One day the Princess, being alarmed by a tiger, cried aloud, and king *Ráma* heard her. He came to the place, made himself known, and they were married. The Princess bore thirty-two sons, who were instructed by their father in all the accomplishments fit for Princes. When the king of *Bara-na-thee* heard what had happened, he offered to resign the kingdom to his father *Ráma*. But *Ráma* refused saying, "Here leaving my *Kalan* tree, I have built a city," and from that, the city came to be called *Kau-la-na-ga-rá* and thence *Kau-le-ya*. When the sons of king *Ráma* and queen *Pee-yá* had grown up, their mother said thus to them; "The Princes of the *Tha-kee* race of *Kap-pi-la-wot* are your uncles; their daughters are fond of dress and perfumes; when they come to bathe in the river *Rau-ha-nee*,* you go to the river bank and seeing your comeliness they will love you." Their mother having said thus, the sons went to the river bank, and when the *Tha-kee* Princesses were drying their hair after bathing, they listened to the words of the Princes and followed them. When the *Tha-kee* Princes heard this, as the race of the young men was not different, they acquiesced. Thus commencing with king *Ráma* and queen *Pee-yá*, the *Kau-le-ya* tribe originated.

The *Dewá-da-há* kings began thus. The *Tha-kee* Princes of *Kap-pi-la-wot* had a small lake where they built a pleasure-house. When the country increased the place was called *Dewá-da-há*. The Prince who lived there was called the *Tha-kee* Prince of *Dewá-da-há*. So the

* This appears to be the Rohini, one of the feeders of the Rapti.

three kings of *Dewá-da-há*, *Kap-pi-la-wot* and *Kau-le-ya*, with numerous elephants, horses, and soldiers, carried white umbrellas, and attained to the dignity of kings of a great country.

From *Auk-ka-moo-kha* king of *Kap-pi-la-wot*, descended after many thousand years king *Dza-ya-the-na*. His son was *Thee-ha-ha-noo*, and the latter's son was *Thoo-dau-da-na*. The sister of *Thee-ha-ha-noo* was *Ya-thau-dha-ra*. The son and daughter of *Auk-ka-ka*, the king of *De-wá-da-ha*, were married to the daughter and son of king *Dza-ya-the-na* of *Kap-pi-la-wot*. The children of the *Dewá-da-ha* chief were *Inzana* the son, and *Kinzana* the daughter. *Thee-ha-ha-noo* the son of *Dza-ya-the-na* married *Kinzana*, and they had five sons named, *Thoo-dau-da-na*, *Dau-tau-da-na*, *Thek-kau-da-na*, *Thook-kau-da-na*, *A-mee-tau-da-na*; and two daughters, *Ame-tá* and *Pa-lee-tá*. *Dza-ya-the-na's* daughter *Yu-thau-da-ya* married *In-za-na* the son of king of *De-wá-da-ha*, and had two sons, *Dan-da-ha-nee*, and *Thob-ba-bood-dha*; and two daughters *Thi-ri-ma-há-má-ya*, and *Pa-za-pa-tee-gaw-da-mee*. The elder daughter gave birth to the Phrá loung* Prince *Theiddatta*; the younger daughter gave birth to *Dza-na-pa-da-ka-lya-nee*, called also *Roo-pa-nan-da* and *Nanda*. *Ameeta* the daughter of *Thee-ha-ha-noo*, married *Thob-ba-bood-dha* the son of *In-za-na*, and had a daughter *Bad-da-kin-za-ná*, and a son *De-wa-dat*.† The Prince or Phra loung *Theid-lat-ta-kooma-ra* the son of king *Thood-dau-da-na* married *Bad-dha-kin-za-ná* called also *Ya-thou-dha-ra*, the daughter of *Thob-ba-bood-dha* king of *De-wá-da-há*. They had one son *Ya-hoo-la*.

The (maternal) grandfather of the Phra, named king *In-za-na*, corrected the Calendar in the year 8645, and in 67 (of the new era) the Phra loung entered the womb of *Thi-ri-ma-há-má-ya*, and when ten months were completed he was born in the year 68, on the full of the moon *Ka-tshon*. At sixteen years of age, he married *Ya-thau-dha-ra* the daughter of *Thob-ba-bood-dha*, and for thirteen years enjoyed the life of a Prince in the palace. At twenty-nine years old, he went forth from the palace, and having attained Boodbahood, and preached

* Phrá loung i. e. the embryo Phrá, a term for Gautama Budha. The word *Phrá*, now adopted into the Burmese language, is according to Professor Wilson a corruption of the Sanscrit *Prabhu* Lord or Master. This appears to be the most probable origin of the word. It certainly is not a pure Burmese word. The orthography of it in ancient stone inscriptions at Pagan is *Bu-rhá* and *Pá-rhá*. The Burmese have used the original much as European nations have the Pali word *De-ge-ba*. The modern word is written *Phu-rá*.

† This *De-wa-dat* was the great opponent of *Budha Gautama*. They were first cousins by birth, and *Gautama* had married *Dewa-dat's* sister.

the law during fifty-one years, he, in the year 148,* at the age of eighty, passed to *Neih-ban*, or in common language, died. He died in the country of *Koo-thi-na-yoon*, where the *Malla* tribe ruled. In the month *Wagoung* of the same year, the first *Thengga-ya-na* or great council, was called by *A-dzá-ta-that* the king of *Radzagyo*, and it was then agreed, that that year should be counted as the year one, of religion.†

As the kings of Burma claim to be descended from the *Tha-hya* race of *Kap-pi-la-wot* to which Gautama belonged, the inter-marriages of the chiefs of that tribe are thus carefully detailed in the history.

Having brought down the narrative of events to the death of *Budha Gautama*, the first volume of the work proceeds to give an account of the geography of the world of *Dzam-boo-dee-pa*, where the Buddhist kings reigned. In this mythological geography, *Dzam-boo-dee-pa* refers to the earth generally, but that term is constantly confused by being sometimes applied to the continent of India only, the other parts of the world being considered as too insignificant whether in extent or in civilization, to be mentioned. *Dzam-boo-dee-pa* therefore frequently represents India prominently, and the world remotely.

The great earth, or substratum of rock on which *Dzam-boo-dee-pa* rests, is represented as being 82,000 *yoozanas* in depth. On this rock, rests *Dzam-boo-dee-pa* or the island of the *Dzam-boo* or *Eugenia* tree. It is broad at the north side, and to the south narrows like the fore-part of a cart. This represents roughly the form of the continent of India, which shows that the ancient books followed by the history, frequently by the term *Dzam-boo-dee-pa*, referred to India only. From north to south it is ten thousand *yoozanas* long, and the same from east to west.

In the great ocean outside and which surrounds it, are five hundred small surrounding islands. Ceylon is a prominent island to the westward. At the northern extremity of *Dzam-boo-dee-pa*, grows the *Eugenia* tree with golden fruit, the size of globular water-pots.

In the Himalaya, it is stated there are seven great lakes. From one named *Anau-tat-ta* proceed four great aqueducts. By one of these, a river issues through the elephant mouth into the western sea; by another, a river falls through the horse-mouth to the northern sea;

* This refers to the era established by king *In-za-na*.

† According to the Burmese Calendar, the year 2406 of religion commenced on the 13th of April, 1862, when the year 1224 of the common era commenced.

one through the lion-mouth to the eastern sea ; and one through the cow-mouth into the southern sea.

All the countries of India as mentioned in the *Maha Raza Weng* are enumerated below, but there appears to be some confusion, resulting apparently from some states having in the course of time subdued others, and from the historian not knowing, that some small States appear sometimes as members of a confederacy, in an extensive country occasionally called by one general name ; and at other times are lost in the establishment of a monarchy.

The region of *Meets-tree-ma-detha* or the central land, is bounded to the east by *Ga-dzeng-ga-la-ne-gon* village ; to the south-east by *Thal-la-ua-tee* river ; to the south by *Thé-ta-kau-nee-ka-nee-gon* village ; to the west by the Brahman village *Dho-na* ; to the north by *Oothi-rid-da-dza* hill. In the centre is the great *Bau-di* tree. Around are the sixteen great countries which are as follows :—

- | | |
|----------------|---------------------|
| 1. En-ga. | 9. Koo-roo. |
| 2. Ma-ga-dá. | 10. Pin-tsa-la. |
| 3. Ka-thee. | 11. Mits-tsa. |
| 4. Kaw-tha-lá. | 12. Thoo-ra-the-na. |
| 5. Wits-tsee. | 13. A-tha-ka. |
| 6. Mál-lá. | 14. A-wan-tee. |
| 7. Tsé-ti-ra. | 15. Gan-dá-ra. |
| 8. Wan-tha. | 16. Kam-bau-dza. |

There are also 21 great countries :

- | | |
|----------------|------------------|
| 1. Koo-roo. | 12. Weng-ga. |
| 2. Thek-ka. | 13. Wee-dé-ha. |
| 3. Kau-tha-la. | 14. Kam-bau-dza. |
| 4. Ma-ga-da. | 15. Mad-da. |
| 5. Thee-wee. | 16. Beg-ga. |
| 6. Ka-lin-ga. | 17. Eng-ga. |
| 7. A-wan-tee. | 18. Thee-ha-la. |
| 8. Pin-tsa-la. | 19. Kath-mi-ra. |
| 9. Wits-tsee. | 20. Ka-thee. |
| 10. Gan-dá-ra. | 21. Ban-da-wa. |
| 11. Tse-ti-ra. | |

The great kingdoms are twenty :

- | | |
|-------------------|---------------|
| 1. Ba-ra-na-thee. | 3. We-tha-li. |
| 2. Tha-wat-tee. | 4. Mi-hti-la. |

- | | |
|----------------------------|---------------------------|
| 5. Aa-la-wi. | 13. Kap-pi-la-wot. |
| 6. Kau-tham-bee. | 14. Tha-ké-ta. |
| 7. Oodz-dzé-nee. | 15. In-da-pa-ta-na-go. |
| 8. Tek-ka-shyo-la. | 16. Ook-ka-ta. |
| 9. Tsam-ba. | 17. Pa-ta-li-poot. |
| 10. Tha-ga-la. | 18. Dze-loot-ta-ra. |
| 11. Than-thoo-ma-ra-gi-ri. | 19. Theng-kath-tha-na-go. |
| 12. Ra-dza-gyo. | 20. Koo-thee-na-yon. |

Such were the countries in the time of Gautama.

The countries reigned over by all the great kings commencing from *Maha-tha-ma-dá*, and numbering three hundred and thirty-four thousand five hundred and sixty-nine kings were :

- | | |
|------------------------|------------------------|
| 1. Ko-tha-wa-tee. | 12. Kau-Thamb-bee. |
| 2. Ra-dza-gyo. | 13. Kan-na-gantz-tsha. |
| 3. Mi-hti-la. | 14. Raw-tsa-na. |
| 4. Bú-ra-na-thee. | 15. Tsam-ba. |
| 5. Kappi-la. | 16. Tek-ka-so. |
| 6. Hat-ti-poo-ra. | 17. Ko-thi-na-yon. |
| 7. E-ka-tsek-khoo. | 18. Ma-lit-ti-ya. |
| 8. Wa-tsee-ra-wot-tee. | 19. Kap-pi-la-wot. |
| 9. Ma-dhoo-ra. | 20. Kau-li-ya. |
| 10. Aree-ta-poo-ra. | 21. De-wa-da-há. |
| 11. In-da-pa-ta-na-go. | |

The first volume of the history then concludes with maxims for kings and people which need not be entered here.

The second volume opens with the following words :

“ In the first part we have narrated the history of the kings commencing from *Mahá Thama-dá* up to the time of the excellent *Phra Gautama*, there being three hundred and thirty-four thousand five hundred and sixty-nine kings in lineal succession. In this second portion we shall relate the history of thirty kings commencing from *Peim-ba-tha-ra* up to king *Dham-ma-thau-ka*.”

Of these princes it will not be necessary to relate more than what is essential in order to understand the history of Burmah. The history first refers to the country of *Ra-dza-gyo* and then follows the stream of Buddhist religion and authority, until it widens into the broad channel of sovereignty under *Dham-ma-thau-ka*, whose seat of empire was at *Pa-ti-li-poot*.

Thoodhau-dha-na, king of the Thek-ka state in the country of *Kap-pi-la-wot*, had a great friendship for *Bha-gee-nee-ya* king of *Ra-dza-gyo* in *Magadha*. The prince *Theid-dhat-ta* had also a great friendship for the prince of *Ra-dza-gyo*, *Beem-ba-thá-ya*. The latter died eight years before Gautama attained *neibban*, and his son *A-dzá-ta-that* succeeded. *A-dzá-ta-that* reigned thirty-two years until the year 24 of religion [B. C. 519,] when he was succeeded by his son *Oo-da-ya-bad-da*.

A-dza-ta-that formed a friendship with that base man *De-wa-dat*, and having murdered his father was condemned to hell; but after a long term of suffering he was to be permitted to be born as a *Pits-tsi-ka-Budha*. He was succeeded by his son *Oo-da-ya-bad-da* who reigned until the year 40 of religion, when his son *A-noo-rood-da* conspired and reigned in his stead.

In the year 72 of religion his descendant *Na-ga-da-tha* was set aside by the people as one of a parricide race, and a nobleman named *Thoo-thoo-na-ga* succeeded him. His history is as follows. In the country of *We-tha-li** the *Leitz-tsha-wee* princes assembled and consulted thus—"Our country has all the elements of greatness, yet is quiet when exertion is called for. Why are other countries constantly stirred up?" They decided that the country was quiet because there were no courtezans. They therefore caused the daughter of a wealthy man, one of their own race, to be so appointed. One of the *Leitz-tsha-wee* princes took her to his own house. She gave birth to a son. The child was put into a jar and thrown outside the city. The jar was found by some of the citizens, opened, and the child was taken and brought up by a noble. He was named *Thoo-thoo-na-ga* because the city Naga had uttered a sound like *thoo-thoo* which led to the discovery of the jar.

At a time when king *A-dza-ta-that* meditated an attack against *We-tha-li*, he sent the Brahman *Wa-tha-ka-ya* to *Gautama*, who replied that the *We-tha-li* princes observed the law and were destined to long greatness. The king said to the Brahman, "What shall we do?" The Brahman replied, "Make a show of banishing me from the country; I will first go and destroy the unanimity of the *We-tha-li* princes, and you can then march and conquer the country." In three

* *We-tha-li* appears to have been one of the States of the *Leitz-tsha-wee* princes?

years the plan was accomplished, and by this means, the child *Thoo-thoo-na-ga*, who had become a noble, was brought to *Ra-dza-gyo* and eventually became king.

King *Thoo-thoo-na-ga* lived in *We-tha-li*. After a reign of eighteen years, he died in the year of religion 90.

He was succeeded by his son *Ka-la-thau-ka*. In his reign in the year of religion 100, the second great Council was held in *We-tha-li* under *Shen-ya-tha-tay* with seven hundred Rahandas. He died in the year of religion 118. On his death his son *Bad-da-thé-na*, with nine younger brothers, reigned for twenty-two years. In the year 140, the last of these ten brothers named *Pin-za-ma-ka*, was king. He was killed by one *Kho-mhoo-nan-da* who became king with the name of *Oog-ga-the-na*. His history was as follows:—On the border of the country of *We-tha-li*, there lived a robber chief, who at the head of a large band plundered the country. Once, in plundering a party of merchants, a porter belonging to them joined the robbers. He in time became the captain of the band and was called *Kho-thoo-nan-da*. Gradually he acquired power, and at length usurped the throne, putting to death the king *Pin-za-ma-ka*.

Oog-ga-thé-na did not live long. His eight younger brothers succeeded him. The last of them was *Da-na-nan-du-meng*. He was murdered by *Dza-nek-ka* the Brahman, and prince *Tsan-da-got-la* of the *Mau-re-ya* line was placed on the throne. He was king of all *Dzam-bu-dce-pa*.

The history of *Mau-re-ya* is thus: In the time of the Phra, some of the Tha-kee princes went and built a city in the Himalaya forests. It was called *Mau-re-ya* from peacocks being numerous there, or from the city being in the shape of a peacock's neck. *Dza-nek-ka*, the Brahman, was an inhabitant of the country of *Tek-ka-tho*. His father died early and he was brought up under the care of his mother. He when young was noted for his learning and accomplishments. It was predicted that he would become a king, but at the request of his mother he broke his canine teeth and vowed never to become a king. He came to the country of *Pa-ti-li-pool*, in the reign of *Da-na-nan-da*. He became acquainted with the king's son, *Pap-pa-ta*, and persuaded him to leave the city and live in the forest. He endeavoured to find a person to substitute for prince *Pap-pa-ta* as successor to the throne and he found *Tsan-da-got-la*. His history is thus related. Once the

country of *Mau-re-ya* was attacked and subdued. The queen being pregnant fled to the country of *Pa-ti-li-poot*, and there gave birth to a son. The child was put in an earthen vessel and placed near a cow enclosure. The cowherd found him and brought him up with his own children. A friend of the cowherd, a hunter, loved the child and asked for him. The child then was made over to the hunter. He displayed great power and ability, and the Brahman *Dza-nek-ka* hearing thereof gained possession of him from the hunter. The Brahman brought him up until he was full grown. He was named *Tsan-da-got-ta*. By an artifice *Tsan-da-got-ta* was induced to murder prince *Pap-pa-ta*. *Tsan-da-got-ta* then under the influence of *Dza-nek-ka* gradually collected forces, attacked villages, and at last expelled king *Da-na-nan-da* from *Pa-ti-li-poot*.

Tsan-da-got-ta then was consecrated king. He had a son born to him who was named *Bein-du-tha-ya*. *Tsan-da-got-ta* died after a reign of 24 years in the year of religion 186 = B. C. 357.

His son *Bein-doo-tha-ya* married a princess of the *Mau-re-ya* race, who gave birth to *Dham-ma-thau-ka*. This Prince appears to have murdered all his father's sons by other mothers than his own. *Bein-doo-tha-ya* either died naturally or was murdered in 214 of religion.

Dham-ma-thau-ka attended to the internal affairs of the country for four years before he was crowned, and in the year 218* of religion he received the *abeit theit*. His brother *Tei-tha* he appointed Crown Prince. Four years after being consecrated as king, he sincerely entered religion. The history of *Dham-ma-thau-ka* as the great supporter of Buddhism, the founder and encourager of missions, is narrated at considerable length. He discovered and opened the under-ground building in which the relics of Gautama had been deposited by *A-dza-ta-that*; he took them out and distributed them. In the year 234† of religion, he assembled the third general council presided over by *Mang-ga-lee-poot-ta-tee-tha-tay* and consisting of one thousand selected Rahans. He then turned his attention to the great object of establishing religion all over the world or in all countries contiguous to

* B. C. 325. On this subject see Cunningham's *Bhilsa topes*, page 74. He applies a correction of sixty-six years to this Buddhistical date, and gives good reason for doing so.

† B. C. 309. This is not the date of the third general council as given in Cunningham's *Bhilsa topes*, page 116, and to which the correction must be applied.

India. For the present history, it is only necessary to notice two out of the nine missionaries then sent forth. They are *Yau-na-ka-dhamma-rek-khee-ta* to *A-pa-ran-ta* or Burma according to this history; and *Oot-ta-rá* and *Thau-na* to *Thoo-wan-na Bhoom-mee* or the Talaing country. In both those countries the missions were successful, and multitudes of men and women became Rahans. King *Dham-na-thau-ka* died in the year 255 of religion.

The second volume of the history ends with the death of this king.

The third volume of the *Maha Radza-weng* commences with the direct history of the Burmese kings in the following words: "We shall now relate the first commencement of the long line of the *Mran-má* kings in the great country of Tagoung; the origin of all the kings who have reigned in the land; and also treat of the first foundation and the progress of divine religion in the *Mran-má* country, under the *Mran-má* kings."

The country which in the time of our lord Gautama is called *Tagoung*, was originally established by Abhi Radza. His history is as follows. Before the appearance of the lord Gautama, the king of *Kau-tha-la* and *Pin-za-la-reet*, wishing to ally himself with the king of *Kau-lee-ya*, sent a noble to demand one of the daughters of that sovereign. The *Kau-lee-ya* king from pride of race did not send a satisfactory answer. A war then arose, and the king of *Pin-za-la-reet* was victorious. The three *Tha-kee* kings of *Kau-lee-ya*, *De-wa-da-ha*, and *Kap-pi-la-wot* being conquered, their countries were destroyed. Afterwards they were once more restored to prosperity. At the time when the *Tha-kee* kings were thus depressed, *Abhi Radza* the king of *Tha-kyá Tha-kee* race in *Kap-pi-la-wot*, in consequence of the disturbed state of *Mitz-tzi-ma-de-tha*, took with him his army, and went and established the country called *Then-ga-tha-ra-ta* or *Tagoung*.* *Abhi Radza* at his death left two sons, the elder named *Kan Radza gyee*, and the younger *Kan Radza ngay*. They quarrelled regarding their succession to the throne. By the advice of the wise men of the nation, they agreed to abide by the result of a rivalry in good works, and not of war. It was arranged that each was to commence at night fall to erect an *alhoo mandát* or religious building, and the Prince who first finished his building was to succeed to the place of the father.

* Tagoung is an ancient city now in ruins situated on the Irrawaddy river in about 23° 30' N. L.

Each selected a hill on which to erect a building. The elder brother commenced his building with heavy timbers and bamboos. The younger brother commenced with light timbers and covered it with white cloth and plaster, so it was finished in one night. In the morning when the elder brother saw that he had lost, he collected his followers and went down the Irrawaddy river. He then ascended the *Tha-la-watee* or *Khyen-dween* river, and established himself at *Ka-lé-doung*.* At that time the tribes called *Pyoo kam yan* and *Thek* asked for a king, and the Prince made his son *Moo-doo-tseit-ta* king over the *Pyoo* tribe. "*Kan Radza gyee* went westward and established himself on the mountain called *Kyouk pan toungr*† east of the river *Gits-tsha-bá*. He then became king of the country."

Kan Radza ngay reigned in Tagoung the country of his father. He had thirty-one descendants who reigned successively in Tagoung. In the time of *Bhein-na-ká* the last king of that race, Chinese and Tartars from *Gan-da-la-reet* Province, in the country of *Tsein*, invaded the kingdom. The king was obliged to retire with his army to the *Ma-lé khyoung*‡ where he died. From thence his force was divided into three parts; one went eastward and established the nineteen Shan states; another division went down the Irrawaddy river and remained in the country of the *Pyoo-kan-ran* and *Thek* tribes, where the *Tha-kee* Prince *Moo-doo-Tseit-ta* had formerly established himself in *Thoo-na-pa-ran-ta*. A portion remained in *Ma-lé* with the chief Queen *Na-ga-tshein*.

At this time Gautama appeared in *Mitz-tsee-ma-detha*. The king of *Tha-wat-tee*, *Pa-the-na-dee*, *Kau-tha-la*, demanded a daughter in marriage from *Mahá-ná-ma*§ king of *Kap-pi-la-wot*. The king did not give him a pure daughter, but one born from a slave girl and named *Wa-tha-bha-Khat-ti-ya*. She gave birth to a son named *Wee-ta-thoo-pa*. When he had grown up, he went to see his relations in *Kap-pi-la-wot*. As they insulted him on account of his inferior birth he determined on revenge. After his father's death he thrice led his armies against *Kap-pi-la-wot* but was restrained by the expostulations

* This lies west of the Khyeng-dwen in about 23° N. L.

† This is a mountain in the northern part of Arakan. The story here related is found also in the history of Arakan. Vide Journal Asiatic Society, Vol. XIII. p. 34.

‡ *Malé* is on the Irrawaddy river, about eighty miles above Aunrapoora.

§ It is presumed that after the death of *Thoo-dau-daná* the father of Budha Gautama, *Mahá-ná-ma* one of the same family succeeded to the throne.

of the lord Gautama. A fourth time Gautama seeing inevitable punishment due to the demerit of the Sakee Princes forbade him not. The Tha-kee race of *Kap-pi-la-wot* of which *Mahá-ná-ma* was then king was either destroyed, or dispersed among the neighbouring states of *Maure-ya* and *We-dee-tha gi-ra-dza*. Thus was that great country of *Kap-pi-la-wot* twice destroyed; once in the time of king *Kau-le-ya*, and once in the time of king *Mahá-ná-ma*.

At the time of this last destruction, one of the *Tha-kee* Princes named *Daza Radza* left *Mits-tshee-ma-de-tha* with many followers, and first established himself at *Mau-re-ya*,* called also *Mau-ringa*, and now *Miwé-yeng*. From thence he removed and established himself in the country of *Theng-dwai*. From thence he removed to *Malé* where he met the Queen *Na-ga-tshein*, and as they were of the same *Tha-kee-ya* race they were married. They then built the city of upper Pügán. There a son named *Wee-ra-ga* was born to them. They once more removed to the ancient capital of the *Tha-kee* race of kings called *Ta-goung* or *Theng-ga-tha-ra-ta* and called it *Pin-tsa-la-reet*, and hence the country is also called *Pin-tsa-ta-goung*. This king established regular government. By his two chief Queens he had twenty sons and twenty daughters, and the sons married their half sisters.

To this king there succeeded seventeen kings in regular succession, but their reigns were very short. The last of them was named *Tha-do-má-há-radza*. This king had no son. The chief Queen *Kein na-ree De-wee* had a brother named *La-bá-doo-há* and he was appointed *Ein-Shé-men* or Crown Prince.

At that time in the country of the *Pyoo* tribe the race of kings descended from *Moo-doo-tseit-ta* the son of *Kan Radza gyee*, as above related, was represented by *Tap-bco-la*. He was disturbed by attacks from *Dhi-ngya-wa-tee* or Arakan, and went with his people to the *Tha-gya* lake.

“As then we have related the first dawning of the Burmese country of *Ta-goung* before the lord Gautama appeared, now we shall proceed to narrate the history of *Tha-re-khet-ta-ya*.†”

* By this name is meant the country west of the Khyeng-dweng river now called the Kubo valley.

† This is the name of the ancient city to the east of Prome. It appears to refer to the Khatri or Rajpoot caste.

"In the fifth year after the lord Gautama attained to the state of Budha, two brothers named *Maha-poon* and *Tsoo-la-poon* asking leave from the Phra, built a monastery called *Tsan-da-koo-nan-tha* at the village of Say-gaing in the country of *Thoo-na-pa-ran-ta*.* The Phra also prophesied (that) 'hereafter in the *Mran-má* country my religion will be long established,' and accompanied by five hundred Rahandas he frequently came through the air before the monastery was finished; when the monastery was finished he received it in gift, and remained there seven days, and preached. At that time five hundred men and five hundred women in *Thoo-na-pa-ran-ta* became Rahandas. At that place was a hermit named *Theet-tsa-ban-da* who had attained the state of an Arceya. At his intercession the Phra left the impression of one foot on the *Theet-tsa-pan* hill; and at the intercession of the *Na-man-da Na-ga* he left the impression of the other on the bank of the Mán stream. Thus two firmly founded pagodas were fixed in the rock as if sealed down, and the Lord said:— 'Hereafter my religion shall be long established in the countries of *Thoo-na-pa-ran-ta* and *Tampa-dena*.'† From thence the Phra went and arrived at the Pho-coo hill.‡ To the south-east was the sea. On the water was the appearance of something floating and just appearing above the surface. A little *pwé* or bamboo rat lifted up its nose and did homage to the omniscient Phra. The Phra smiled at these two omens, and, in reply to his younger brother who asked for explanation, said, 'Beloved Anan-da, in the year 101, after I shall have entered into the rest of *pa-ree-neib-ban*, five great omens shall be manifested here. They are, *first*, A violent earthquake shall shake the whole land. *Second*, where the Bho-oo peak now rises there shall be a lake. *Third*, the *Tsa-moon-than-my-cit* river shall be formed. *Fourth*, the earth

* This is on the Mán river which runs into the Irrawaddy from the westward near the town of Menboo.

† Tampa-dena is one of the ancient names for Ceylon. According to the practice of the Buddhist nations of Indo-Chinese to transfer to their own countries the name of Buddhist lands in the west, this name was given to Pagan and the surrounding country. The name was probably given after the books were brought from them and a reformation made in religion. Pagan was more anciently called *A-rimad-da-na*. This history, however, intimates that *Tampa-dee-pa* was the more ancient name. *Thoo-na-pa-ran-ta* is mentioned as a country in the Buddhist Scriptures. See *Hardy's Buddhism*, p. 259.

‡ This is the name of a peak on the west bank of the Irrawaddy near to Prome. Great changes no doubt have occurred in the course of the Irrawaddy river, probably within the historical period, about Prome. The rocks around Prome contain large deposits of marine shells, so that the Burmese had evidence of the sea having once reached there.

shall rise and form *Poop-pa-toung*.* *Fifth*, in the country to become *Tha-re-khet-te-ya*, the sea shall be dried up. In the time when those omens shall be manifested and fulfilled, that little *pwé*, removed from his existing body, and become a man, shall be king over a great country under the name of *Dwot-ta-boung*. In that king's reign, in the *Mran-má* country, my divine religion shall flourish and shall exist throughout long ages.' "

According to that divine prediction the Phra went to *xaree-neib-ban* and in the year 40 of religion in the reign of *Tha-do-ma-ha Radza* king of *Pin-tsa-ta-goung* before mentioned, a mighty boar twelve cubits high ravaged the country. The Crown prince *La-ba-doo-ha* went forth armed to destroy him. The boar fled to the Shan country, and the prince followed. The glen where he entered the mountains east of the Irrawaddy is called *Wet-weng* (boar entrance) to this day. The prince chased him down the west bank of the Irrawaddy, though how the boar arrived there is not stated, and he crossed again to the east bank. As from his great height his belly was not wet by the water, the place he reached is still called *Wet-ma-tswot†* (boar not wet). The boar then continued his flight down the east bank of the river until he came to an island near to *Tha-re-khet-ta-ya*. There the prince overtook him. The place is called *Wet-hto-kuyen* to this day.

The prince now reflected that he was far from the country of 'Ta-goung, and that his story of having killed the boar would not be believed; and wearied with the world he determined to become a hermit in the place where he was. There were then no inhabitants near at hand except wild animals. In the jungle a doe produced a young one in the form of a human female child. The doe, startled by the cry of the infant, fled, and the hermit coming to the spot was astonished at the sight. The hermit carried the child to his cell, and brought her up as his own daughter. When she was grown up, he gave her the name of *Bhe-da-ree*. "Such is the story of the first establishment of the city of *Tha-ré-khet-ta-ya* by the hermit who was the brother-in-law of the king of 'Ta-goung."

In the very year when the Crown-prince *La-ba-doo-há* went forth to slay the boar, the queen of 'Ta-goung gave birth to twin sons. They

* The name of an extinct volcano about 200 miles north from Prome.

† This is a place below the petroleum wells in the Irrawaddy river.

were both born blind and named *Mahá-Tham-ba-wá* and *Tsoo-la-tham-ba-wá*. The king from shame ordered them to be killed; but the queen loving the children of her own bosom concealed them, until they were nineteen years of age. The king then having discovered that they were alive, again ordered them to be killed; but the queen had them put into a boat, with many days' provisions, and set them afloat on the Irrawaddy river. As they floated down the river, the boat struck against the branch of a *Tsect* tree. At that spot in after times was built the city of *Tsect Kaing*. As they proceeded down they met with a *Bee-loc-ma*, who gave them some medicine to restore their eyesight. The cure was effected, and looking up and seeing the sky for the first time they said, "The sky is as a cover; the earth is underneath," and hence the place they were passing was called *Myé-dai*. At length they reached the place at Prome* where their uncle the hermit dwelt. There they beheld the hermit's daughter *Bhe-da-ree* drawing water from the stream, with a gourd. As the water would not flow readily into the gourd they opened it. *Bhe-da-ree* then filled it and returned to her father's cell. She told him the cause of her quick return, and the young Princes being called, they told their story, and the hermit learned then, that they were the sons of his sister the Queen *Kein-naree-de-wee*. After this the elder brother Prince *Mahá-Tham-ba-wá* was married to the hermit's daughter *Bhe-da-ree*. This was in the year 60 of religion according to the *Mahá Radza Weng*, or, by the Burmese reckoning of the period of Gautama's death, 483 years before Christ. From this time commences the history of the monarchy established at *Thare-khet-ta-ya*, and no further notice is taken of Tagoung and the upper country of the Irrawaddy until some centuries later.

Note on the etymology of the word Myan-ma or Mran-má.

In the Journal of the Asiatic Society No. I. of 1853, is an interesting paper by Mr. B. H. Hodgson, on the languages of the Indo-Chinese borderers, compared with the Thibetan and Himálayan tongues. In that paper Mr. Hodgson appears to conclude that the term Burma or Burmese, which is the Europeanized form of the name by which

* See Journal of the Asiatic Society, Vol. XXV. p. 173, for an account of the pagoda built upon that spot.

that people call themselves, can be traced to the native name for man. This, however, is open to some doubt; but Mr. Hodgson's general conclusion that the languages of the Himálayan, Indo-Chinese, and Thibetan tribes are of one family is fully justified.

The name by which the people known to Europeans as Burmans or Burmese call themselves, is written by them Mran-ma and sometimes Mram-ma, and is pronounced Ba-má. The Arakanese call themselves Ma-ra-má which is a variation of the same word. The questions involved are,—

1st. Does the word Mran-ma contain the root signifying man in some of the Indo-Chinese dialects?

2nd. Is the word Mran-ma directly derived from the name for man generally, and on that account used as the national designation of the Burma?

3rd. Can any other origin for the term Mran-ma be found, from which it is more likely to be derived?

It is shown by Mr. Hodgson that in many of the above languages *ma* and *mi* mean *I*, and *man*, (pp. 5, 34, 36 and 63), and hence it is concluded that the etymology of *Burma* or Burmese is recovered. The word *Burma* or Burmese no doubt is the European form of Ba-má. Is the written form *Mran-ma* the original, of which the spoken form *Ba-má* is a mere colloquialism? or is the latter the real original expression of the name for the race? The Arakanese, it may be noted, do not use the form *Ba-má* and therefore are never called by Europeans Burmans or Burmese.

The root *mi* in the Burmese language has now no known reference to the pronoun *I*, or to *man*, as a general term, whatever it may formerly have had. It now means female; with the prefix *a* it means mother, and sometimes a daughter. As an affix to the word *tha* or *Sa*, *child*, it signifies a female *child*. The root *ma* has the same general meaning, *female*; but has a more dignified signification than *mi*. It is also applied to female animals. The word for woman, *Mien-ma* or *Mi-ma*, is probably the union of the two forms of the root representing female, and is applied to woman as the female *par excellence* (see p. 66 of Mr. Hodgson's paper). The personal pronoun *Nga*=*I*, is both masculine and feminine. But though I cannot agree that the root *mi* or *ma* appears in the word *Mran-má*, that root may possibly appear in the Burmese word *myo*, *mro* or in its Arakanese

form, *mru*=*race*, and *seed*; possibly also this word may originally have signified *man*, in the Burmese as now in the Mrú language, (see p. 34). Mr. J. R. Logan in the Journal of the Ind. Arch. for 1857, Vol. II., observes "The root of Mran-má is *ran*, one of the forms of a widely spread Himalaic name for man. Karen has the same root, with the guttural in place of the lateral prefix." I have not been able to satisfy myself as to the grounds on which this observation is founded.

The question still remains, whence the word *Mran-má*, which is pronounced *Ba-má*, and in the Arakanese form *Ma-ra-má*, is derived?

I believe it to be a modern appellation adopted by the people since they became Buddhist, and derived from the Pali word *Brah-ma* signifying celestial beings, as shown in the text. Hence it really has only an accidental similarity to the word for man in some of the Indo-Chinese dialects. It is much as if the *Angli* had adopted the national name *Angeli* with their Christianity, with this difference, that we know for certain that the *Angli* originally so called themselves, but we do not know for certain what the Burmese called themselves, before they adopted the name *Mran-má*. The pride of the people caused them to assume this as their national designation. The only names for the ancient tribes which may have become the *Mran-ma* nation, which we are acquainted with, are *Pyoo*, *Kan-yan* or *Kan-ran* and *Thek* or *Sak*.

Is it possible that in adopting the word *Brah-ma* as their national name they kept in view also their native root *ma* as Mr. Hodgson would appear to conclude? This I will not venture to affirm, but of the direct origin of the present national name I have no doubt. Nor need it cause surprise that a people should have adopted a foreign term to designate themselves. With their religious instructors they received knowledge of every kind. The districts of their country were named after the countries of their teachers. Even their great river, known in the vernacular as *Myit-gyi*, received an equivalent term in Pali,—*E-ra-wa-ti*; and their capital city always has a Pali name. From the history it is evident that the name *Mran-má* was not adopted until after several tribes had been united under one powerful chief, by whose fiat the name would readily have been adopted.

With reference, however, to the root *mi* and its appearance in the word *Mien-ma* or *Mim-ma* (woman), it is curious that the Chinese of Yunan call the Burmese *Mien* or *loun-g-mien*, and that is the name

given to them by Marco Polo. I cannot say how the Chinese got the word, but it is possible that *Mien* was the original name for the race, and contains the root meaning man. However that may be, the word in this or any similar sense is now entirely lost among the Burmese, excepting as above noted in the term for woman, and it may be in *Mru* (race). It does not appear as the name of any of the tribes with which the Burmese might be supposed to be immediately connected.

Observations.

Having traced thus far the legends of the Burmese race from the earliest period, down to the time when a new dynasty was established near Prome, about three hundred miles lower down the Irrawaddy than the ancient capital Tagoung, it will be convenient to pause, and enquire how far we can discern any true historical basis in the legends and tales which have been narrated.

The physiognomy and the language of the Burmese people, as well as those of the adjoining tribes, proclaim them all to belong to the same family of nations as the tribes of Thibet and the Eastern Himalaya. Whence did they come? and how did they arrive at their present country? The theory of Prichard in his *Natural History of Man* on this subject is probable, is supported by existing facts, and accords with the physical geography of the regions north of the countries now occupied by the Indo-Chinese races. That author thus refers to those peoples. "The vast region of Asia forming the south-eastern corner of that Continent, which reaches in the sea border from the common mouth of the Ganges and the Brahmaputra, to the Hoang-ho, or Yellow River of China, and even further northward towards the mouth of the Amur or Selenga, is inhabited by races of people who resemble each other so strongly in moral and physical peculiarities, and in the general character of their languages, as to give rise to a suspicion that they all belong to one stock. With the rivers which descend from the high country of Central Asia, and pour their diverging waters on all sides, after traversing extensive regions of lower elevation, into the remote ocean, these nations appear also to have come down, at various periods, from the south-eastern border of the Great Plateau; in different parts of which, tribes are still recognised who resemble them in features and language."

To the great central region of high Asia, Prichard traces what he terms the five nomadic races, namely the Ugrian, the Turkish, the Mongolian, the Tungusian, and on the south-east the Bhotiya, "the mountain people who on the northern boundary of Hindustan have appropriated the name of Tartars, though they have no right to that celebrated appellation, which belonged originally to the Mongolian tribe who inhabited the banks of the lake Bôugir." And again, "If we were at liberty to hazard a conjecture as to the origin of their nation, it would be, that all the people who inhabit the low countries of south-eastern Asia, from the mouth of the Amur, or at least from that of the Hoang-ho, southward and westward as far as the Brahmaputra, are offsets from one of the great nomadic races of high Asia, namely from the Bhotiya, who occupy the southern margin of the great central upland." This conjecture is in a great measure confirmed by the researches of Mr. B. H. Hodgson, who, in the paper already quoted, observes that "One type of language prevails from the Kali to the Kuladan, and from Ladakh to Malacca, so as to bring the Hima-layans, the Indo-Chinese, and Thibetans into one family."

It is reasonable to conclude that tribes leaving the south-eastern margin of the great plateau of central Asia, early in the existence of the human race, would naturally follow the downward course of streams and rivers. Among the earlier emigrants from that part of Asia towards the south, as far as we can now discover, were the ancestors of the present *Mon* or *Talaing* people, the aborigines, so to speak, of Pegu. It is also probable that the Karens left their ancient dwelling-place at an early period. They have remained for the most part up to the present time uninfluenced by Buddhism, and with their language unwritten, until about the year 1830 A. D. Their traditions of their own origin, or at least of the route by which they arrived at their present seats, are therefore more trustworthy than those of the Burmese or of the Talaings are, regarding themselves. Many of these traditions are preserved in a small volume written by the Rev. Dr. Mason, Missionary to the Karen people. It is entitled "Traditions of the Elders." While the traditions or legends of the Burmese, influenced by the source whence they derived their religion, and by the ambition of their kings to trace descent from the Buddhist sovereigns of their holy land, refer to India as the cradle of the royal race, and almost seem to derive the great body of the people from

the same country, the more trustworthy traditions of the Karens point to central Asia as their ancient home.

Their traditions say, "We anciently came from beyond the river of running sand, and having marked out Zimmay (two hundred and fifty miles north-east of Maulmain), for ourselves, returned. Afterwards when we came to dwell there, we found the Shans occupying the country. Then the Karens cursed them, saying, 'Dwell ye in the dividing of countries.'"

The countries in which Europeans first came in contact with Karens have only lately been occupied by them, but the mountain country between the Salween and Sitang rivers, has probably been theirs for many ages.

Dr. Mason points out that Fa-Hian, the Chinese pilgrim to India of the fourth century, also speaks of crossing the "river of sand" or great desert between China and Thibet. Further it is stated, "Their traditions point unequivocally to an ancient connection with China; for Tie or Tien is spoken of as a god inferior to Jehovah,* and offering to the manes of their ancestors is as common among the Karens as it is among the Chinese." It is evident "the river of sand" of the Karens must be the great sandy desert of Mongolia, stretching for many hundreds of miles along either side of the 40° of North latitude. The story of coming to Zimmay under a chief to inspect the country, and then returning, must be accepted as the modern version of the fact, that about Zimmay they were stopped in their progress south along the water-shed range, between the Salween and Menam rivers, by the previous occupation of the Shan race. The Karens are mentioned by Marco Polo, and appear then to have occupied the country east of Bamo on the upper Irrawaddy.

Some of the religious traditions of the Karens are remarkable. They are distinguished from all the Indo-Chinese tribes with which I am acquainted, by the knowledge they have of the existence of one eternal God. He is not worshipped, because, as they appear to suppose, he is angry with them. It is impossible to conjecture with probability how they acquired this knowledge. They believe also that they once possessed books. Notwithstanding what has been said by some writers as to the "Caucasian countenances," the long faces, and "straight noses" of the Karens, I must uphold that their national

* Or Yu-wa, the name given by the Karens to God.

physiognomy is essentially Indo-Chinese, and their speech connects them with the same family. In every Indo-Chinese tribe, occasional exceptions to the general flat physiognomy are met with. These are almost always among the men. The women have more frequently the true type of Mongolian or Bhotiya face.

Such tribes as the Burmese, the Karens and the Mon would readily find their way from central Asia by the courses of the rivers Salween and Mee-nam towards the south. Some would be led westerly, and so gain the valley of the Irrawaddy in the upper course of that river. This, the Talaings and Burmese probably did at an early period,* while the Karens kept for ages to the mountains bordering east and west of the Salween and Mee-nam rivers, and only lately came into the Irrawaddy valley and along the mountains bordering the sea-coast as far as the 12° N. L. They may be classed in three great divisions, having numerous tribes and dialects, but all possessing the same characteristics as far as they have been observed, up to the 20th degree of north latitude.

It has already been mentioned that the people called by Europeans Burman or Burmese, called themselves *Mrun-ma*, a name which is generally pronounced by them *Ba-má*. This word, as has also been stated, is of foreign origin. From the history we learn that at an early period there were three tribes in the valley of the Irrawaddy, who appear to have been the progenitors of the present nation. These

* Mr. J. R. Logan remarks upon this subject as follows :

"The present position of the *Mon-Anam* nations might lead us to suppose that they moved into Ultra-India, and thence into India. But the relation of the *Mon-Anam* to the Vindyan dialects shows, that the Dravirian traits of the former were wholly or chiefly acquired in Bengal, and renders it probable that they did not reach the south by the basin of the Irrawaddy, but by that of the Tsang-po Brahmaputra, like the later Tibeto-Burman tribes. How far Ultra-India was then inhabited, and what languages were there spoken, cannot therefore be ascertained from the character of the *Mon-Anam* languages." Again, "The *Simang* and *Anda-manni* are the purest remnants of a pre-Himalaic colony, and it is probable that similar Dravido-Australian tribes occupied it, so far as it was inhabited, before the *Mon-Anam* race entered the region." Journal, Indian Arch. pp. 156, 157. Among the traditions of the *Mran-má* race in Arakan, are traces of the existence of a hateful race of men, which existed on the sea coast, when the *Mran-mas* entered the country. They are called in the vernacular *Bee-loo* which implies a monster, or cannibal, in human shape. It is from these beings that the country received its Pali name of *Rek-khaik* and hence its present name *Ra-khaing*. *Rek-khaik* appears to have the same general signification as the vernacular *Bee-loo*. The Pali name being given to the country would seem to show that some *Bee-loos* were still there, when the Buddhist missionaries entered Arakan. The word *Bee-loo* appears to answer generally in popular, meaning to the English Ogre. There are no traces of the *Mon* people ever having passed through Arakan.

tribes are called *Byoo* or *Pygo*, *Kam-yan* or *Kan-ran*, and *Thek* or by the Arakanese *Sak*.* They probably were three allied tribes, more closely connected with each other than were others of the same original stock, settled in the upper Irrawaddy valley, or on the adjoining mountains. I see no reason for doubting that they had found their way to the valley of the Irrawaddy by what is now the track of the Chinese caravans from Yunan, which track debouches at Bamo on the river. There they probably remained for many ages without being disturbed by any superior tribe. The history of the Burmese being written under the direct influence of the kings, it is not surprising that every effort should therein be made to show, that the royal race is descended from the kings of those people who brought to the Burmese letters, science, and religion; whereby the savage Indo-Chinese tribes of the Irrawaddy were civilized and made into a nation. Accordingly we find that the foundation of the state of *Kap-pi-la-wot* by a tribe of Rajpoots is carefully described, and as it appears to be admitted to be an historical fact that *Kap-pi-la-wot* was attacked, and the people dispersed, even during the life of Gautama, a previous emigration from thence to Burmah under Abhi Radza is invented for the national history. This name Abhi is native not Pali, signifying an ancestor in the fourth generation, and the names of his two sons, both called Kan, with the Pali word for king and the native terms elder and younger, added, appear to refer to them as acknowledged chiefs of the *Kan-ran* tribe. Under the two sons of Abhi Radza a separation of the tribes or of the people under their sway takes place; the elder branch going westward and settling in the country now called Arakan; the younger remaining in the valley of the Irrawaddy. In this legend there appears to be a germ of truth. The Arakanese also have the national name of *Mran-ma*. The country they inhabit received the Buddhist name of *Rek-khaik* from the monsters believed to inhabit that wild unknown coast, and hence the modern native name *Ra-khaing* and the European Arakan. But this name has no connection with the race of the people. The Arakanese being of the same stock as the Burmese, and still acknowledged to be the elder branch of the family, undoubtedly entered their present country from the eastward, that is from the upper valley of the Irrawaddy, as their own

* *Sák* is still the name of a small hill tribe in Arakan. It is similar in sound to the name of the tribe Gautama belonged to.

traditions attest ; and it appears not improbable that this movement may have been made by the mountain passes which *Kan Radza-gyee* is described as having traversed to go westward. But according to the history this event occurred thirty-one generations of kings before the time of Gautama. That race, at the end of the thirty-first king's reign, died out in Tagoung, or rather was driven out by an invasion of northern hordes. A female descendant of the kings was preserved, and when the *Sakya* race of *Kap-pi-la-wot* was destroyed in the time of Gautama, or about the middle of the sixth century B. C., one of the princes of that tribe named Dazá Radza is again described as coming from *Kap-pi-la-wot* to the Irrawaddy, to continue the ancient race in that region. That wild Indo-Chinese tribes should find their way from the bleak north, down to warmer and more fertile climates of the south, is credible ; and that after reaching the Irrawaddy they should proceed westward across the mountains, and so reach the sea, is not improbable, as the more direct route down the Irrawaddy was already occupied by the *Mon*. That such indeed was their course is borne out by existing facts. But if we consider the present state of the countries lying between Bengal and Burmah, from Cachar eastward to the valley of the Irrawaddy ; and consider also the difficulties for travelling over that route, which must have been presented twenty-five centuries ago, the supposed emigration, either for conquest or colonization, by the comparatively civilized tribes of India, to the barbarous wilds lying east of Tipperah and Cachar, will appear very improbable. On the other hand it is highly probable that religious zeal would carry missionaries wherever a route for trade existed, however wild and dangerous that route might have been. It appears probable that a trade did exist from early times through eastern Bengal *vid* the upper Irrawaddy to China.* Traffic is frequently carried on by very difficult routes, and by paths which people well advanced in civilization, in a fertile and extensive country, would not follow in search of a land to colonize. Merchants will venture into such countries, as is exemplified in the way the wild tribes east and northeast of Arakan are now supplied with salt, and other necessities of life. Where traders go for love of gain, missionaries will go from religious zeal. From these considerations then, while the passage of Buddhist Missionaries to Burma by

* The part of China bordering on Burma is called Tsein by the Burmese. Was the Indian name *Cheen* derived from this source ?

the difficult paths in question might be accepted, the supposed immigration of any of the royal races of Gangetic India to the Irrawaddy by the same route, in the sixth century B. C. or even later, will appear very improbable. Those tribes appear to have regarded Gangetic India as the favoured land of the earth, and would scarcely have emigrated to the savage country east of Bengal. There is indeed no good reason for supposing that any missionaries went to any part of the country now called Burma before the year 234 of religion,* when sent in the reign of *Dham-ma Asoka* as related in this history. But is the record of *Yau-na-ka-dhamma-rek-khee-ta* being deputed by the third great council as missionary to Burma true? It appears not. The Buddhist writings preserved in Ceylon inform us that *Oot-ta-ra* and *Thau-na* were deputed as missionaries to *Thoo-wan-na-bhoomee*. By that name no doubt is meant the country inhabited by the Mon or Talaing race, and their chief city then was on the site of the present *Tha-tung* lying between the mouths of the Salween and Sittang rivers. No doubt the missionaries reached it by sea. That gold was anciently found in that vicinity is testified from the Burmese name of *Shwe-gyeen*, literally "gold washing," now borne by a town on the Sittang, and gold is still found there, though probably in diminished quantity to what it was anciently. This no doubt was the origin of the name "Aurea regio" of Ptolemy. This history assumes that the Pali name *A-pa-ranta* means Burma. There is not the slightest reason for this conclusion. The word means western country and we must look westward from Gangetic India to find it. The fact is the modern Burmese, jealous of the Talaing people having beyond all doubt received a Buddhist missionary in the time of the great *Dhamma Athauka*, determined to appropriate a great missionary to themselves. Portions of their country were also, after the fashion of all the Indo-Chinese countries, named from the Buddhist scriptures, one Province being called *Thoo-na-pa-ran-ta*, and this name lent a specious support to the modern fraud or delusion of *A-pa-ran-ta* signifying Burma. But many other circumstances seem to show that the *Mon* or Talaing race, received Buddhism before the Burmese did. Although the conversion of the people of *Suvanna Bhumi* was planned by people in Gangetic India, it is not probable that so essentially a sea-hating people had their own

* B. C. 308 or twelve years before Alexander crossed the Indus.

ships to convey the missionaries across the Bay of Bengal. Then how did they arrive at their destination?

We may be sure that the mission to *Suvanna Bhumi* was not planned like a voyage of discovery to an unknown land, but was determined on as a mission to extend religion to a country already known at least on its sea-coast, and the inhabitants of which were considered to offer a fair field for success. It is probable that the people of the Coromandel Coast already had settlements on the Arakanese and Talaing coasts as places of trade, and the Buddhists of Gangetic India would in all probability resort to some of the ports on the east coast of the continent, and not far from the head of the Bay of Bengal. At that time it is probable that the people of Telingana carried on commerce with *Suvanna Bhumi*, and the Buddhist missionaries would embark in their ships.

It has already been mentioned that the Talaing people call themselves *Mon*.* They are called Talaing by the Burmese. How came the latter to give them this designation? Certainly it does not bear the sound of an Indo-Chinese word. It is probably derived from the word Telinga, and hence it appears that the tribes of the upper Irrawaddy, separated during long ages from the kindred tribes to the south of them, only came to know the Mon after these latter had settlements of Telingas on their coast.† These people no doubt extended their commerce into the interior, and hence the name, easily changed into *Talaing*, came to be given to the whole population. The same result of a partial knowledge of a leading race may still be seen. Until comparatively of late years, the Burmese mixed up English and all Europeans with the natives of India in the one common appellation of *Kulá* or western foreigners; and it is only since the war with the

* The Rev. Dr. Mason in his work on Burmah states his opinion that the Mon language is entirely distinct from all the Indo-Chinese languages of the tribes adjoining, and considers that *Mon* comes nearer to the *Kole* or *Ho* language as depicted by Major Tickell in the Journal of the Asiatic Society, Vols. IX. and X., than any other. Mr. J. R. Logan considers "the radical identity of the native pronouns, definitives, and numerals of the Kol with those of the Mon-Anam group as established." Both "groups in their glossarial basis, are branches of one formation, much more akin to Tibeto-Burman than to Dravidian." Jour. Ind. Arch. 1859, p. 66. For the connection between all the languages of the southern division of the Turanian family, see table No. IV. in Max Müller's Science of Language.

† There is said to have been a Hindu colony at Maulmain, the site of which was called Ramapoora, vide Crawford.


British of 1825-26 that they have learnt to distinguish between the more prominent of the nations lying west of them.

But the fact still remains that the Burmese received religion and letters from India. Did they receive these through the Talaings or from an independent source? It is certain that they had no direct intercourse with the sea probably until the second century of the Christian era. Their alphabet differs in some degree from that of the Talaings, though both are formed on the Deva Nagri model. The circular form of the letters of both indicates the influence of the Tamulic letters. The Burmese appears the more perfect of the two, and has probably been formed at a later period than the other. It does not appear that the Burmese people received their religion and letters through the medium of their cousins the Arakanese, for that people refer to the eastward as their own source of both. The passage of Indian Buddhist missionaries therefore from Gangetic India through Bengal and Munnipore to Burma, is a probable event, but it took place much later than has been represented. The only direct evidence we yet have on this subject, is the discovery of a Buddhist image at the ancient capital Tagoung, bearing an inscription in the Deva Nagri character as described by Colonel Burney in the 5th volume of the Journal of the Asiatic Society of Bengal, page 157. This image was found to have a Sanscrit inscription, being the well known text of *Ye-dham-ma* &c. &c. This is not the only inscription of the same kind that has been found at Tagoung, and the fact appears to indicate that Tagoung received missionaries direct from northern India. The character in which the above text is written on the base of the image is considered by Prinsep as coinciding with the letters of the inscription No. 2 on the Allahabad Buddhist pillar.

We may then conclude that the rude tribes inhabiting the valley of the upper Irrawaddy, who at that time, like the hill tribes of to-day, worshipped only the spirits of the woods, the hills, and the streams, were converted and civilized by Buddhist missionaries from Gangetic India. A monarchy was then established at Tagoung, which gradually extended its authority, and appears from the history to have been overturned by an irruption of (so-called) Tartars and Chinese. The names given to the invaders are *Ta-ret* and *Ta-rook*. The latter word is evidently the same as *Turk* and is applied at the present day by the Burmese to the Chinese generally. The destruction of the kingdom

of Tagoung led to the establishment of a monarchy at *Tha-re-khet-te-ya* near the modern Prome. There, according to the history, a descendant of the ancient kings of Tagoung, after a series of wonderful events, succeeded to the throne of the king of the Pyoo tribe, which people was up to that time dominant in the country round Prome. Whatever this event as told may really mean, we may consider it as certain, that the tribes dwelling in the country round Tagoung, where Buddhism and some degree of civilization had been established under a powerful dynasty, were overwhelmed by a horde of invaders from the north-east, and that many of them found a refuge among their kinsmen the Pyoos.

The present kings of Burma, as has already been stated, claim descent from the ancient Buddhist sovereigns of *Kap-pi-la-wot*. It may not be out of place here to mention some of the Indian and Sakyan customs preserved by the Burmese royal family. Among these are the marriages of half-brothers with half-sisters, a practice which does not exist in any other family in the kingdom; the ceremonial called *a-beit-theik* or pouring out of water on the accession of a new sovereign; preserving unmarried the king's eldest daughter; the figures of a peacock and of a hare, symbolical of the sun and moon, and typifying descent from the solar and lunar races, being painted on the king's throne. For the same reason the figure of a peacock is borne on the royal standard. One of the royal titles is "sun-descended monarch," and a title of honour frequently bestowed even on foreigners is that of "Member of the race of the sun;" while the badge of nobility is the caste-thread of the Brahman and Rajpoot tribes represented by golden chains worn slung from the left shoulder, across the breast and back, to the right hip. These and some other customs are tenaciously adhered to by the royal family of Burmah, who consider themselves as ethnologically and religiously the descendants of the Buddhist kings of *Kap-pi-la-wot*.



Account of further intercourse with the Natives of the Andaman Islands.

(Extract from a letter from COL. TYTLER, Superintendent of Port Blair,
dated the 14th January, 1863.)

I enclose notes from our daily interview with the aborigines; though not very interesting, still they may afford some idea. I think the time has now come when we may reasonably expect a friendly intercourse with them;—pray let me know your views; this is the first time they have ever been so friendly, and their women are now coming forward. Smith and his crew have beyond all doubt gained their confidence, so I will encourage him as much as possible in this important duty.

For upwards of a month a body of aborigines have been seen at North Point and in their canoes in North Bay, and when boats have gone near them, they have evinced a friendly feeling towards Europeans, although they are distrustful to natives, and on one occasion they entered a boat containing a crew of Europeans, and danced; this has induced me to desire that some, if possible, could be persuaded to visit Ross Island in order by kindness to establish a friendly intercourse; accordingly I suggested to a party of the Naval Brigade to carry out if possible my views; and on the 7th inst., Smith a Petty Officer went over with six men in the jolly-boat, and found the natives very friendly; they came down to the boat, and received bottles, plantains and pieces of old iron which were given to them, and in return they gave six bows and a lot of arrows and waist belts; this is a large party, and a fresh arrival here, they are all evidently strangers.

January 8th.—Smith and the same party of Europeans went over again in the morning and had a long interview with them, they gave their bows and arrows, and anything else they had about them, willingly in exchange for biscuits and plantains; this is the first time they have ever parted with their bows in such numbers. At noon, Smith and the same crew went across again to induce some to come over to Ross Island; though about 24 came down to the boat they did not like staying in her; at last two of them, a boy and a man, got into the boat, and as they shewed an inclination to cross over, they were brought to Ross Island where they had clothes given to them; they then walked up the hill to the Superintendent and then to the barracks; they shewed no signs of fear, only did not like being separated; they were much taken

with a looking-glass, and kissed it to see what it was, and then looked behind it to see who was there; the wooden floors of the bungalows and barracks astonished them at first; they seemed to wonder at the noise made when walking. They soon however got over that, and then danced vigorously, thumping as hard as they could and slapping their chests, at the same time singing; the boy was about 18 years old and the man about 25; the former shewed great intelligence, and both appeared docile; after remaining two hours they were taken back with lots of presents.

9th.—Smith and his crew going across this morning, the natives came down without hesitation, and several wanted to be taken to Ross Island; five were brought over, one of whom was over yesterday; all the way across he was talking to the others and pointing out the different places, and on reaching Ross Island he took the lead on shore. On coming into the officers' quarters where they were at breakfast, they wanted every thing they saw on the table, and did not scruple to help themselves to whatever they fancied. They were all young men, very short, from 4 ft. 6 in to 4 ft. 10 inches in height, roughly tatooed, very black, and all except one quite bald; the hair is very woolly, and very thick and short; the hair of those that were quite bald had evidently been shaved;—one had a little crop of hair on his head; they were taken to see the pigs and were very much astonished at seeing such large ones, and seemed to wonder why they were shut up. A box was put up for them to shoot at with their bows and arrows;—they shot very well at 80 yards, but beyond that they were uncertain, though they shot with considerable force. A pig was given to them to take away, and some dogs; on taking them back, three women were seen, the first that have ever shewn themselves to Europeans, and some of the men went on shore, and into the jungle; the natives wanted Smith and his crew to stop with them and sleep; they made signs that they would soon make a hut and bed; their huts are the simplest things possible—three or four ratans stuck in the ground and bent together at the top, and a few leaves laid on loosely at the top; the height of them from the ground is only three feet, and for all the shelter they afford, one might as well be under a tree or bush. The fondness they evince for children was unmistakeable; when they saw mine, they stroked the head of my little son, who has long flaxen hair, and carefully tried to re-part the hair when they had

ruffled it a little. I mention this trifling incident to shew that they are not devoid of feeling, however savage they may have become from their miserable wild life, and I have no doubt but that the time has now arrived when we may reasonably hope to reclaim and civilize these children of nature. As they trust Smith and his crew, who certainly have gained their confidence, I will endeavour through their agency to accomplish my object.

10th.—It was some time this morning before any natives came down to the boat on its going across;—they probably were gorged with all they eat yesterday, for they had also killed and eaten the pig that had been given to them; but by going into the jungle to their camp, some were soon induced to come down, and also one of their women and two men; the woman came into the boat, and came to Ross Island; one of the men had been over on both the former occasions, and although clothes had been given to him each time, still he came over in a state of nudity; the woman also, with the exception of a waist belt, with a buff passing between her thighs, was quite naked; she was very timid and kept a tight hold of the man's hand, and was very observant of every thing; a large pig was shot for them to take away, and they stood by when the gun was fired, without expressing any fear or wonder as to how the pig was killed.—On taking them back, the natives crowded round the two that had been to Ross Island and had a long talk; they evidently had been afraid that we should have kept the woman, and were delighted to see her safe back; the woman was about 20 years of age, smaller in height than the men, very black and excessively African looking, —no hair on the head but a thin line in the shape of a long horse shoe extending from the centre of the head downwards, so, Ω , and the skull daubed over with clay; for decency's sake, the sailors put a sort of jacket and gown around her. One of the men had his right foot amputated, and his right ear nearly cut off,—evidently an old warrior, and about 40 years of age, but not grey in his woolly head of hair;—the sailors made a crutch for him with which he was delighted and used it well;—the other man was about 30 years old.

11th.—Two men and a woman were taken this morning up to Chatham Island, and were there photographed, they were then brought over to Ross Island—the woman was very lively, and laughed a great deal, going about any where without the slightest alarm.

She had her head shaved, like the men ;—a little patch of woolly hair was left on the back of the head,—her height was 4ft. 4½ inches. The men appear to make the women perform all the work, and do not themselves carry any thing but their bows and arrows, and to-day when the boat got back from Ross Island, although only three women were on the beach and about twenty men, the women were made to carry all the things from the boat ;—the men helped in cooking the pig ;—the woman who came to-day was rather good looking, and about 20 years of age, very black, but with a pleasing countenance ;—she frequently repeated the name the sailors had given her (Madam Cooper—the former one being called Queen Nic)—she was very much struck with the appearance of our little children, and begged to have them to kiss ;—great respect appears to be shewn by the men towards the women, who appear almost to command the men, notwithstanding that they seem to do all the work for them ; this may be owing to the apathetic nature of the men ; they give every thing up to the women, who freely take from the men any presents they may have received. Amongst themselves they have a kind and friendly feeling ;—they appear to love dogs and small animals, which they hold and nurse with affection. I remark the men have an aversion to carrying anything, for when presents are given to them they try to get the sailors or even the convicts, to carry them. Both the men had their heads only half shaven, which gave them an odd appearance.

12th.—The second Launch went over with Smith and his crew, and remained there all day. Some of the men went on shore and cleared away a piece of ground on which they will build a hut ;—the natives watched the proceedings very attentively, but on trying to get them to do anything in the shape of work they only laughed, and would try for a few minutes and then give up and point to their arms and legs. On the Launch returning for the evening, five men and three women came across, and were taken to the barracks, and a pig given to them for supper,—they singed the hair off first and then cut it up into joints and chops ;—they had a common knife to do this with, and no butcher could have done it better,—each joint came off as easily as possible,—they never missed the joint or had to cut twice. A room was given them in the barracks, and they passed the night quite quietly, —before dark they were rather anxious, and seemed to wish themselves on the other side again, but when they got their supper that wore off ;

in the evening they sat outside near a fire and roasted plantains, yams, and fish, and were not at all timid, and quite pleased.

13th.—The Launch started from Ross Island with them, taking portions of a hut to be erected on North Point for them; but after proceeding some distance, it was, owing to an accident obliged to put back to Ross Island, so the natives or rather aborigines amused themselves by entering the bazar and receiving presents of rings, &c. &c. from the convicts and shop-keepers. In the evening, the Launch put off again, and as it was late when they reached the other side, the aborigines would not land but returned to Ross Island and slept in the boat with the sailors.

14th.—The Launch went over to North Point with the aborigines; this morning upwards of ten women came out to welcome the party;—the hut is being erected. Smith and his crew have not yet returned, and all promises to be successful, at least I hope so. I will continue this Journal, for I must now close this, to send off by the Burmah Mail Steamer.

Note on the Bactro-Pali Inscription from Taxila.—By Major-General A. CUNNINGHAM.

In his note on my remarks on the Taxila inscription, Babu Rajendra Lal states that according to me "the Hidda record opens with the words *Samvatsaraye athavisatihi*, 20.4.4. (= 28) *mase Apilaësa eka-visitih*; but that, on referring to the facsimile in *Ariana Antiqua*, he finds that the only letters visible are 4 4 *mase Apeüsa chidasa*, and that the letters from 'Samvat' to '20' do not exist in the original."

A similar remark has been made by Professor Dowson on my previous reading of this date as 28, (see *Royal As. Soc. Jour.* Vol. XX. p. 230). The Professor's words are as follow: "The inscription on the Hidda jar appears to be the earliest date known, the year being $\times \times = 8$. Col. Cunningham in his last paper on these dates reads it as consisting of three figures, but this is a mistake, as there are only two figures."

Notwithstanding these rather startling statements of two well known scholars, I adhere to my reading as noted in the extract from

Rajendra Lal's remarks. The words which are so confidently stated not to exist in the original will be found at the end of the upper line in the copy of the inscription in Ariana Antiqua. As this record is stated to be inscribed on an earthen jar, I concluded that the writing was *continuous* round the vessel, and that Masson in making his copy *in a straight line*, had begun with the two remarkable crosses, simply because he was obliged to begin somewhere; and, as it is certain that he could not read a word of the inscription, I felt no hesitation in transferring the last twelve letters of *his* copy of the first line to the beginning of it.

Rajendra Lal specially objects to my reading of the letter *l* in the word *Apilāśa*, as, in his opinion, the word of the original cannot by any possibility have an *l* in it. In reply to this I need only refer the Babu to the very same form of the letter *l*, as read by himself *throughout* the Wardak inscription. I therefore adhere to my first reading of *Apilāśa* for the Macedonian month of Apellaios.

I note that Professor Dowson reads *aṭṭa* for eight, whilst I read *atha*. The latter form is that which is used in the Indian Pali inscriptions of the western caves,* and it is also the spoken form of the present day. Moreover I look upon the character, which he reads as a double *t*, to be only a slight modification of the *th* of the Shâh-bâzgarhi inscription. For these reasons I adhere to my own reading.

Rajendra Lal objects to my reading of the word *Panemasa* for the Macedonian month of Panemos, for which he proposes to read *panchamasa*, or the "fifth" month. But there is a serious objection to this reading in the fact that we have no grounds whatever for assuming that the Hindus ever numbered their months beyond the *four* months of *each* of the *three* seasons into which the early Indian year was divided. There could not therefore be a fifth month. It is true that both Dr. Stevenson and Mr. Thomas Lane managed to squeeze 32 days into a fortnight, but this has only been effected by misreading the final ill-formed letter of the word *batiya* as a cypher for 30, thus making "*bati 32*" instead of "*batiya 2*."†

With reference to Rajendra's correction of my translation, I beg again to state that I only put it forth as an "imperfect version of *such parts* of the inscription as I had been able to make out," (see

* See Bombay As. Soc. Journal, Vol. V: Junir 24, and Nasik 6.

† Bombay Journ. As. Soc. Vol. V. Karli 18, line 3.

p. 139, *Journ. As. Soc. Bengal*, 1863). On all questions of Sanskrit Grammar, I bow to Rajendra Lal's acknowledged learning, and I have therefore only a few words to say regarding his remarks. The word *sapatika* (or *sepatika* in Professor Dowson's copy) I left untranslated—but the next word, *aprativādita*, I rendered by “matchless teacher” as a simpler and more characteristic expression than the more literal form of “unopposable in argument.” I translated the words *saputra-dāra*, as “together with his son's wife,” instead of “together with his son and wife,” because I believed that if the latter sense had been intended, the word *cha* “and” would have followed *dāra*.

In page 153 Babu Rajendra accuses me of “dropping altogether the *vre* before *hi* in my reading of the date of the Wardak inscription;” but in making this statement he is again mistaken, as he will find by referring to p. 145 of my remarks, where there is a star, thus * before *hi*, which is the usual way of marking that a letter is not satisfactorily legible. But besides this prominent star, the Babu will find, only just two lines afterwards, the following remark: “One letter only is doubtful, although according to the form given to it in the copy, it should be *ste*, or perhaps *vri*.” The insertion of the word *divasa* in my first reading was a simple oversight, as the Babu might have seen by its omission in my last reading.

In the engraving of my inscription from Ohind, the straight stroke which follows the syllable *San*, and precedes the figures, is a mistake of the engraver. On this part of the stone there is a slight irregular crack the whole way across it, which has been *straightened* and *shortened* by the engraver into a thick upright stroke, which looks exactly as if it was a part of the inscription. I notice this the more particularly, because Professor Dowson has thought it possible that this stroke might, if it meant any thing, stand for 100.

With reference to the names of the Macedonian months, which I have read in no less than three of these Bactro-Pali inscriptions, Babu Rajendra remarks (see p. 152) that “the system of naming days according to the moon's age is peculiarly Sanskritic, and the division of the month into the light and dark halves of the moon is of Indian or Sanskritic origin.” On this point I wish to draw the Babu's attention to the practice of the ancient Greeks, from Homer's time downwards, who divided their months exactly in the same way, namely into the “first” and “second” halves, *μῆνός ἱστανμένον* being the first

or waxing half of the moon, and $\mu\eta\nu\sigma\ \phi\theta\acute{\iota}\nu\omicron\nu\tau\omicron\varsigma$ being the second or waning half of the moon. This mode of computing the days of the month fell into disuse before the time of Alexander, as he is recorded to have died on the 28th day of Daesius.

I may note here, with reference to early dated inscriptions, that Professor Hall's conjecture that the Budha Gupta inscription of Eran had a figured date of three cyphers, as well as a written one, is correct. The date is given in figures, *San* 165. The middle figure is the same as that to which Mr. Thomas has assigned the value of 50; but the true 50 is formed thus, J , and the 60 both of this inscription and of the coin is found

differently thus, J . The cypher for 40 as found on Skanda Gupta's

coins is like the Bactrian *ch*, H , or the *pt* in Gupta characters.

The decimal cypher on Budha Gupta's coins I read as 70. In the early Indian system of notation, there would appear to have been two distinct cyphers for 100. Thus on the Gupta coins, and in the early

Mathura inscriptions, I find the Bactrian letter Z or *h*, the initial of *hat* or 100 in the spoken dialects of the West; but on the early coins of Ujain as well as in the inscriptions of the Balabhi copper plates, the cypher for 100 is the old Nāgari M or *s*,—the initial letter of *sat*, or 100; and this same letter is still used in Malabar in the old form as the cypher for 100. The other centenary numbers are formed by *attaching* the units on the right hand of the cypher for 100 thus ML is 200, ME is 300, and MH is 500, in the series formed

from M . In the other series we have Z or Z for 100, and also

H for 100 in the Budha Gupta inscription, and in one of the later

Mathura inscriptions I find the date of *Samvatsara* $\text{Zf}\text{f}\text{f}$ which I read as 780, but with considerable hesitation. This system of forming the hundreds by joining the unit figures to the centenary cypher I showed to Mr. Griffith of the Benares College, as well as to Mr. Bayley some two or three years ago. For the cypher of 500 I am indebted to Dr. Bhau Daji: but, as will be seen above, I do not agree with him in the forms of the figures for 200 and 300.

Remarks on the "Lake of the Clear Water" in the District of Bassein, British Burmah.—By E. O'RILEY, F. G. S., Deputy Commissioner, Bassein.

One of the most material branches of the revenue of the Province of Pegu is that derived from fisheries, which, as the purchase price of the monopoly of lakes and rivers, tax upon nets and other apparatus for catching fish, produces to Government the large item of 4,20,000 Rupees annually. Of this item about one-third is formed from the rent of fresh water preserves situated above the tide-flow in the principal rivers and their affluents; and when that amount is taken as a base of valuation for the quantity of fish obtained, bearing in mind that it represents simply the *right* of fishing only, it will be found that this source of sustenance of life assumes a character almost miraculous; in fact even those who regard the products of nature only as a means to the end of their own wants, can form no appreciable idea of the magnitude of the gift a bountiful Providence has thus bestowed.

Considering the subject of sufficient importance scientifically to engage the interest of the enquiring mind, I have taken as "data" the "Lake" of these remarks, a preserve formed by nature to supply the waters of the main river with a never-failing source of human sustenance, and characterized by geological features that render it the more interesting on that account.

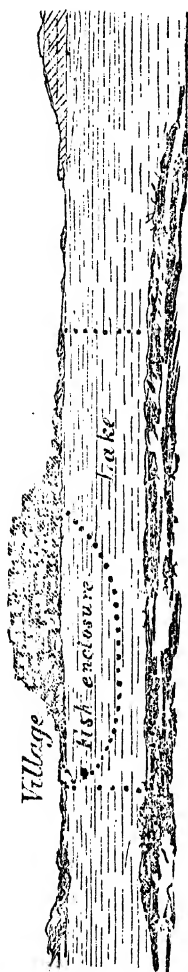
The subjoined rough sketch shews the position of the Lake; its circumference is about 5 miles with a pretty uniform breadth of 280 to 300 yards and depth from 20 to 45 in the centre; it is connected with the "Dugga River," a large branch of the "Na-woon" or Bassein River, by a small outlet which serves to replenish the water of the lake at the period of the freshes from the Irrawaddy during the S. W. monsoon, and carries off the surplus water on the subsidence of the river. In both the small streams indicated forming the inlet as well as the main river, the water is shallower than that of the lake, and the general breadth of the latter greater than the river, so that, notwithstanding the impression on first view of its having at some distant period formed a part of the river, a subsequent exploration induced the conclusion that the lake has been formed by causes totally independent of stream-action, and from the homogeneous character of the formation of its

banks, without any material break in its uniformity of outline, its origin may be attributable to a gradual subsidence of the substratum, or a slip of the lower-lying beds of the tertiary shales and clays upon which the lake rests. It is certainly the fact that the water of the lake when relieved of the surcharge from the river has a different colour (dark opaque olive) from that of the river when uninfluenced by the efflux from the Irrawaddy, and its properties are such as to cause the fish in it to attain a larger size and greater degree of fatness than those of either river or lakes in the vicinity. It may be concluded therefore that at a period perhaps coeval with that of the river itself, the springs which now feed the lake broke through the superior beds, leaving the present circular depression with its Island as one of those eccentric feats of nature usually classed as phenomena.

As a "preserve" for fish to which their natural instincts would direct them for purposes of spawning and breeding, it will be seen that the lake is eminently adapted; and I am informed by the villagers who reside on its banks that after the rains of the monsoon have filled the water-courses, and the "Dugga" has become swollen and rapid, the fish seek the still waters of the lake in vast numbers, making their entrance through the small channel and shallow water at its southern entrance, where the land is low and swampy; this entrance is left open until the fish have passed through, it is then closed during the height of the waters; and on their subsidence, when the channel has become too shallow to admit of the fish escaping, it is again opened.

Under the Burman Government, this lake had a far-famed celebrity from the abundance and excellence of the fish caught on the occasion of the annual drawing of its bed during the full moon of June; on which occasion, traders from Ava, from Prome, and the larger towns on the Irrawaddy, assembled to make their investments in smoke-dried fish cured on the spot, while the fish-dealers from Bassein, and other towns on the lower streams, as at present obtains, purchased the fish alive, and transported them in bamboo cages immersed in the water, from which they were sold still in a live state; owing to the profits realized in this trade, the competition for the purchase of the fish at the lake became so great, that it was not unusual to make advances several seasons previous to the completion of the contract.

So valuable a source of revenue to the Burmese Government as this fishery afforded, was not allowed to escape easily; accordingly the



sum of 60 viss of silver or about 6000 tickals annually was exacted as a Royal tax from the "Payhnen" or hereditary chief of the lake, who exercised sole authority over the villagers employed in the fishery, and, with his subordinate officers, formed an establishment separated in its interests from all other administrative proceedings. The conditions of the payment of this amount of tax were, however, favorable to the villager, as he was exempt from all other process of taxation, and in proportion to his means had a right of investing his capital in the general working of the fishery, the purchase of material for weirs, traps, nets, &c. in proportion with which amount so invested, he received a share in the out-turn at the end of the season.

Writing this memo. on the lake itself, I have been witness to the process of drawing it, so as to enclose the fish within a small space from which they are taken out and sold, and, as I am not aware of any other fishery in Burmah in which the work involved is so extensive, I shall endeavour to give a brief description of it.

On the cessation of the rains of the S. W. monsoon, when the water of the lake has attained its lowest level, a fixed weir is placed across the lake at its shallowest part (marked A on the sketch,) and another at the point B; a drag net of reeds and grass strongly constructed with the toughest jungle creepers, forming from its great length of about 1800 cubits a deep concavity, and sweeping the bed of the lake, is then placed across, inside of the weir at A, and gradually moved round the lake in the direction of that at B; the process of dragging the frame is performed by floating capstans worked by stout hawsers of jungle rope attached to the ends of the frame, which by this tedious process is carried forward during three months at about 45 fathoms each

day, until it is brought opposite the village marked C on the sketch ; a fixed "weir" of bamboo is then made across the lake to form the one side of the enclosure into which the fish are driven ; the ponderous mass of framework is now taken to pieces and reconstructed across the water at the point B, from whence it is dragged to the weir last fixed at the village, and the ends gradually contracted until they form an oblong space within which the fish are enclosed.

When the length of the weirs and of the moving drag frame is considered (about 900 yards,) and the depth of from 12 to 30 ft. of the latter, together with the excessive labour in moving so large a body in one mass, it will be a matter of surprise to learn that the sum of 3000 Rupees is annually paid by the Eén Thoogyee or Chief of the Lake for the privilege of monopoly of its waters, but as no Burman can be brought to appreciate the value of his own labour when employed in his own work, this essential charge, (which would swallow up the entire profits of the speculator were he necessitated to hire such labour), forms no item of the estimate, and each man employed counts as gain all the fish which come to his share after paying any substantial expense he may have incurred during the period of working.

The taking of the fish from the enclosure into which they are ultimately driven is deferred until the full moon of June, by which time the first showers of the monsoon have reduced the temperature of the water, and the fish are then less subject to die than would be the case with the full blaze of the sun, unmitigated by the rain, striking upon the crowded mass ; with this precaution, however, a large number of fish die before the whole has been cleared, and the stench of their corruption taints the air for miles around.

Being unable to stay to witness the final process of catching and disposing of the fish, I am dependant upon the Chief of the Lake for the following description, and as his interests are affected in depreciating the amount of outturn, the quantities stated may be considered as within the actual.

On the near approach of the drag-net to the space forming the enclosure, the fish are observed to be in great commotion, rushing in all directions and attempting to force their way through ; finding the net too strong, many of the larger kind attempt to leap over the barrier, which they effect, only, however, to fall into nets spread to catch

them ere they reach the water ; as the space becomes more confined, the disturbance of the mass of fish becomes so great that the noise of the splashing, and especially the deep hollow "grunting" of the larger kinds, is heard at several miles distance, and although this may appear tintured with a little exaggeration, it will be intelligible when the number of fish caught is never below 70,000 to 80,000 of all kinds, some of which weigh upwards of 15 viss or about 60 lbs. ; and mixed up with the mass it is not unusual to find alligators of all sizes, from the infant of a month, to the grown parent whose skull measures two cubits in length. Strange to relate, no accident or casualty has ever been known to occur from the presence of alligators in this lake, although the men employed in working the drag net are constantly compelled to dive to the bottom in the deeper parts, to clear the lower portion of obstructions in its bed, and I have myself seen an ancient member of the family, whose length could not be short of 15 ft., lying lazily on the surface within 100 yards of a cluster of children bathing near the bank.

During the taking and disposal of the fish, some 8 to 10,000 persons are collected at the small village in front of the preserve, a bazar is formed, and temporary sheds for smoking the fish are built, where the principal amount of business is transacted ; the scene altogether is novel and exciting, and, but for the fishy odour, fresh and corrupt, which pervades the atmosphere, would be well worth the visit of the curious observer.

I omit the native names of the principal fish ; they belong, however, to the following genera,—*Perca*, *Cyprinus*, *Gobio*, *Labeo*, *Limelodus*, *Cirrhinus*, *Cyprinodon* and *Silurus*, some of which attain the large size previously noted. In addition to these, however, there is a multitude of smaller fry which are converted into the coarser kinds of "Nga-pee," and are only interesting to the Ichthyologist, who would here find a large field for observation.

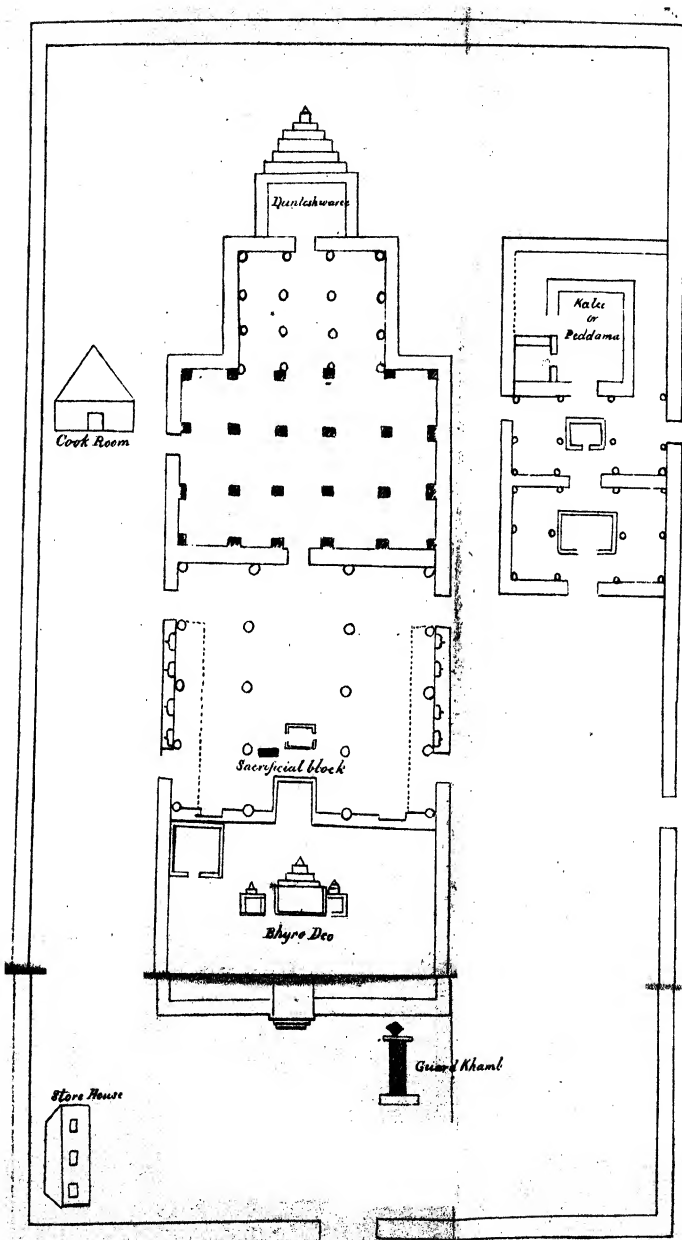
But of those named above, some 25,000 viss, or upwards of 40 tons, are annually disposed of on the spot, and, taking the amount of revenue paid for this fishery or 3000 viss as representing 40 tons of fish, we have for the whole of the fresh water fisheries of Pegu an amount of upwards of 1800 tons of fish annually supplied to meet native requirements, an item considerably within the actual production, but which will

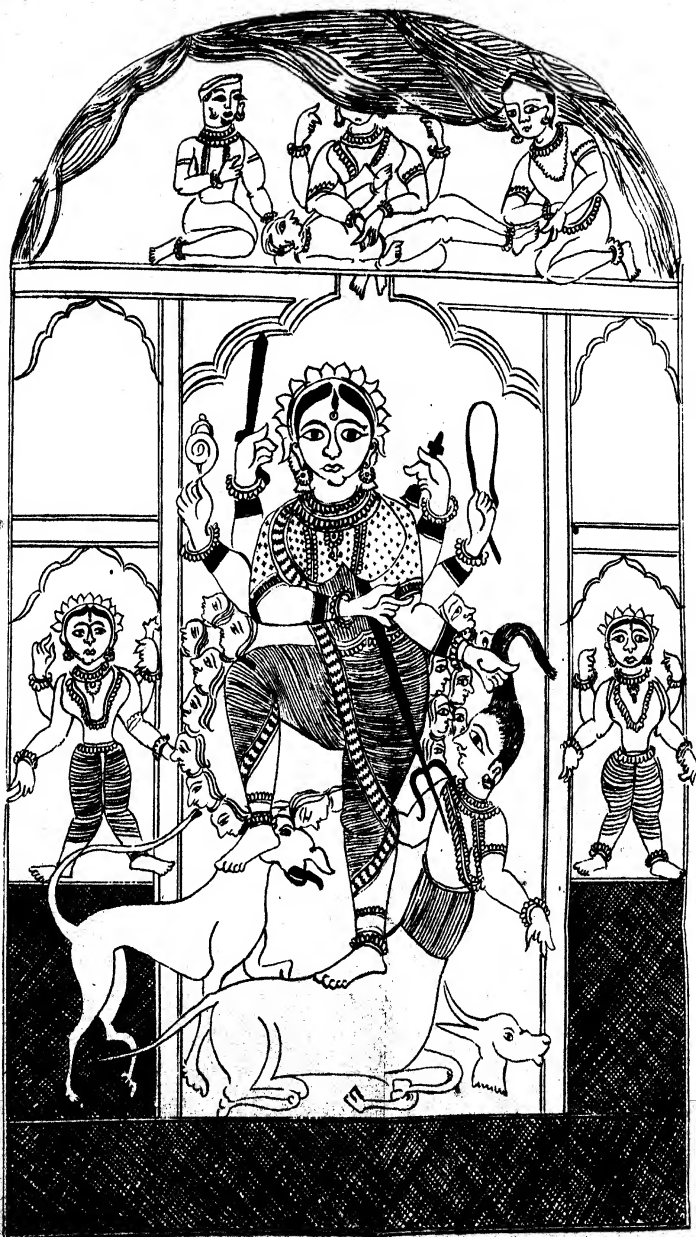
serve, however, to exhibit the value of the inland fisheries as a source of Government Revenue.

The accompanying rough sketch will give but a faint idea of the beauty of the scenery of the lake or of the picturesque sites of the villages on its banks ; it must be seen to be fully appreciated.

Extract from a Report on the Dependency of Bustar.—By Captain C. GLASFURD, Deputy Commissioner of the Upper Godavery Districts.

In comparison with the extent of the Dependency, there are not as many objects of interest as might be expected. None of the previous Rajas of Bustar have erected temples or any permanent buildings, and were the present dynasty to pass away, they would not leave behind them a single edifice of any description to commemorate their rule. It was different with the ruling power whom they appear to have displaced, viz. that of the Nagbunse Rajas of Barsoor and Bhyrungurh. Although it is nearly five hundred years since their power was broken, and their name has been all but forgotten, yet no one can see the ruined temples at Barsoor without instituting a comparison between the past and present rule. It is not that the former were greater than many other petty Rajas, but that the present are so inferior. The ruins of the ancient Barsoor, said to have been the capital of the previous power, are to be traced close to the north of the present village of that name, through a dense jungle of bamboo which has overgrown the site. A high brick wall, the ruins of which are now difficult to follow, seems to have enclosed a space of about one square mile ; whether the city was contained within this I am unable to say ; but within it there are the ruins of four or five temples. They are at some little distance from each other, and from the masses of rock of which they have been constructed, and the richness and beauty of their sculpture, impress one with a favorable idea of the taste and wealth of those under whose rule they were built. Three are in a tolerable state of preservation, one sacred to Mahadeo and another to Peddama, the sister of Dunteshwarree, the original representation of whom was removed to Duntewara by Dulput Deo, Raja of Bustar.





The third appears to have been unfinished, as most of the niches intended for idols are vacant, and there is no representation inside. The fallen ruins of three others testify to the damage wrought by the insinuating roots of the *Ficus Indica*; persons digging for concealed treasure have also facilitated their destruction. The first temple is a flat roofed building supported on 32 pillars, under which are two distinct shrines to Mahadeo, the domes over which have fallen down, carrying part of the roof and wall with them. The whole building is composed of massive blocks of gneiss quarried in the neighbouring hills, well dressed and put together apparently without the aid of mortar; around and inside are a few idols, all of steatite; they are as minutely and elegantly carved as any I have seen, with perhaps the exception of some of the better temples at Vizanuggur on the Toongabuddra near Bellary. In front of this temple I found a slab with an ancient Sanscrit and Teloo goo inscription on both sides; part of it had been broken off and was nowhere to be found; after offering a reward and causing search to be made, I had the satisfaction of obtaining it. As the Teloo goo is of an antiquated character, I regret to say I have not succeeded in obtaining an accurate translation of the inscription;—a fac simile is appended. From what I can ascertain it would appear that the temple of Mahadeo, where the slab was found, was built by a Rajah Someshwur Deo a Nagbunse Kshutrya in the year 1130 of the Vikramaditya era, viz. about 790 years ago. I would be glad to receive information on the subject from any one who is able to decipher the character, and whatever further information I may glean will be communicated.

A gigantic representation of Gunputty, about 10 feet in height and stout in proportion, is one of the most remarkable objects among these ruins. There is one large tank in good repair at Barsoor, and several old ones, and I was told that within a circuit of about 15 miles the ruins of about 150 tanks could be counted. At Bhyrumgurh in the Kootroo talook there are the ruins of two temples within a walled space similar to that at Barsoor.

At Duntewara again on the western bank of the Dunkunee, close to the present village, there are the remains of two temples, one sacred to "Bun Bhyroo;" the remains of a brick wall similar to that of Barsoor can also be traced. I was much struck with the quality of the bricks. I presume they were built shortly after the buildings which they

enclose, and if so they must be at least 500 years old. The bricks were as hard as if they had been taken out of the kiln but yesterday. I could not gather any traditions in the neighbourhood connected with these remains of a former power. All that I have been able to collect is given in the chapter on History and Traditions.

The ruins of Madhota, one of the former capitals of the Bustar Rajas, along with those of Old Bustar, are hardly worthy of remark. There are no buildings of a permanent structure, and the remains of mud walls and ditches are all that can be traced. Near Rajapoor, a few miles north of Chitterkote, there are the ruins of a palace built by Rajpal Deo; his favourite son having died at Madhota he wished to remove his capital to Rajapoor; owing, however, to its vicinity to the Narenjee river, it was subject to inundations, and the people could not be induced to remain there, and upon the death of Rajpal Deo, soon afterwards, the palace was deserted and fell into ruins.

खोपी सीला

दंताबजादेवी जयती ॥ देववाणीमहाप्रशस्तीलीघयेगधर हैय ॥
महाराजादीकपाण देबके ॥ कलीप्रगमहंसक्रतके बच वो अघोर
होइत् ॥ पाददुमरपाधरमाभालीखेहये ॥ सोमबंती पांडबाजुनके
संतानतहकानहस्तीनापुरकोडीके आवरंगलके राज्य भई ॥ बंश-
मडीकाकती प्रतापहदनामराजा भई राजासोवके बंश नउला उछ्या-
नुनकके ठाकुरजीके राज्य सुवर्ण बरसा ॥ भयते राजाके भाई अंग्र-
मराजबस्तरमे राज्यभये आवरंगलकोडीके ॥ ताके संतान हमीर-
देवराजा भये ॥ ताके पुत्र भैराजदेवराजा ताके पुत्र पुरुषोत्तम-
देवमहाराजा ॥ ताके पुत्र जयसिंगदेवराजा ताके पुत्र नरसिंगराय
देवमहाराजा जेकरमहाराणी ॥ लक्ष्मादेवी अनेकताजवागकरी-
सेरहा महादानदिये ताके पुत्र जगदीशराय देवराजा ताकेपुत्र



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 పుష్కరిణి రణావ పుష్కరిణి
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 పుష్కరిణి రణావ పుష్కరిణి
 పుష్కరిణి రణావ పుష్కరిణి

Reverse

తన సంవత్సరము
 లోని వింతలు గాన
 నానాభాషలు విని
 రచనలు నానుట
 కందువ వాలియును
 కుమార్తె పూజా భీకరి
 ఆరంభించి ఆరు కు
 త్రముగాను ముగించుట
 నీ కవులు లభించు
 కౌముదుకండు పోనా
 పుస్తకం సమగ్ర పరి
 త్రముగా వలె పాతిక
 విమలావతారము
 శిశితమగనానా
 నాడువును కుమారు

నకాశలమలవా జంషి.
అమలంబి వీకనామల కామలమల
* వీకనామలమలమల
రలకలలనామలకల
మమలంబునామలకల
తనకామలనామల
పంపంబునామలకల
మమలకలకలకల

Sept. 1862

100 C Glasgow
Dr Lamm

बीरनारायणदेव महाराजा ॥ ताकेपुत्र कीरसिंगदेव देवसमाधर्म
 अबतार पंडोतदाता सर्वगुणसहीतदेवब्राह्मणपालक चंदेलीसीव-
 बदनकुमारी महाराणी वीधैदंताबलाके प्रसादते दीकपालदेव पुत्र
 पाणसंतानशतमहीबरसराज्यकरदीकपालदेव देवकहराज्यो सोपो-
 के बैशाषीपूर्णमासहमप्रणयास अधीबैकुठ गये ॥ ताके पुत्र स्वस्त
 श्रीमहाराजाधीराजा सकलप्रशस्तीसहप्रपूर्णराजके अबतार बुध-
 गणे शुबलभीमसोमकामपन परशुराम दानकराज अर्जुन अबल सु-
 मेरनसीलसागररीके कूम्भवेरतेज्यापोलकीके यमप्रताप अग्नीषा-
 डाधरेनोररीतीसहे श्रीधरे बरुणसेनासकारदारभद्रवबदैतमहादेव
 आचारब्रह्माविद्यासीसनागण्ड अतीदिकपालके गुणादीपंडितवाम-
 नदिकपालदेवनामधरेतेदीकपालदेवबी अहकीकबाहदीके चंद्रहारा-
 बरतनराजाके कन्या अजापकुमारी महाराणी वीधै अंगरहैबर्ध-
 रसपाल देवनामंजुवराज पुत्र मणतबला तेन तरंगपुरढोल कोरिको
 ही सकल बंदकरोजगंन्राथबस्तर बैठके फेरो आबरंगपुरदेखे वोही
 आराजाथापै ॥

पुटेपांच ५ पंक्ति आहेतते समजतनाही

लीपी सीला

श्रीदंताबलादेवी जयती ॥ श्रीसोमवंशपांडवार्जुनकुलेकाकती प्र-
 तापरुद्रनामराजा अबरंगलदेशसंभवत् ॥ जेस्यदंष्ट्रयानवलक्ष्य धनु-
 र्धराचीनाथ प्रथोसासती काकतीये रुद्रोभभवत् ॥ परमग्रहारेपीडा
 कुचकुम्भकुरंगलोचनानां ॥ तस्यैकदा सुवर्णप्रस्थीसंजाती पांडवात् ॥

नष्टगज्यास्य सीवमायुज्यं प्रतप्तरया ॥ आता आत्रमराजनामाधवन-
 मायात्रनीजदेशं परीत्यज्यादंडकारणनीकटवस्तरदेशराज्यं बकार-
 तदवंशहंमीरनामदेवराजाजातः ॥ तत्पुत्रो जगदीशराय देवोज्यातः ॥
 तत्पुत्रो बीरनारायेण देवे महाराजो जातः ॥ तत्पुत्रसमस्तप्रसक्ती
 सहित सुतस्य समुपालीत चातुर्वर्ण्य संतानचन्द्रवंशज्यामहां सत-
 दनीबदन कुमारी देवीसहित संचीतकीर्ती बीतान ॥ श्रीबीरसिंग-
 देवदेवी महाराजा सपषष्ठीवमवंधीमर्ही परीपातये ॥ बयकुंठजग-
 माः ॥ तस्य पुत्रो बीबीधबोरुदाबल बीराजमान मानोभूत् ॥ सम-
 रसाहसिकम कृतारबारी बीदारित प्रसीमहीपंगल ॥ प्रचंडदेरदं-
 डाक्रुकोदंडबंडीता ॥ रातीबर्गहेलाग्रहीतनवरंग सुरदुर्गरीपद-
 महीषीमहारात्रीम् ॥ अजबकुमारी देवी सहित रक्षीतत्रोबटबटर्ग ॥
 श्रीमगरवान गुरुधंत्रोपदेश संजातभवर्ग ॥ प्रतराज्यावतार अष्टाद-
 शवर्षवय प्रतप्तरजपालदेव कुमारी स्वस्त श्रीमहाराजाधीराज दीक-
 पालदेवो जथा ॥ थनामाशत बर्साबत् धीतवधीनीव कटकामही-
 पालथतीन चक्रदाश्वपुर्वानीजनामः ॥ दंताबलासमागता कुंडवज्या-
 चाल्क ॥ तत्र बज्रसहसमहीसच्छागसरीगं योत्ररक्त प्रवाहैः संघीनो-
 नदीश्रीणीसुश्रीणीतोदामकरोत् ॥ ईयेयलोखीतं प्राप्तोतीश्रुत्वा चंद्र-
 तारकं ॥ दीकपालदेवद्रुमो भुपोनामवीताबलोः ॥ संवत् १७६० बै-
 शाखबदी तीज ३ अथवा त्रीतीया लोखीत श्रीमंगलवानामी मइय-
 लोपंडितेन ॥

*Enumeration of the hot springs of India and High Asia.—**By* ROBERT DE SCHLAGINTWEIT, *Esq.*

A memoir by Dr. John Macpherson, "The Mineral waters of India, with some hints on Spas and Sanatoria," Calcutta, 1854,* which was published originally in the "Indian Annals of Medical Science" has been very valuable for the present compilation. Dr. Macpherson includes in his memoir, hot springs as well as mineral ones; I have, however, restricted myself to the enumeration of *hot springs only*, viz. of those, the temperature of which considerably exceeds the temperature of the air at the spot of their origin. I have, therefore, excluded every spring, which, though it may contain mineral ingredients, yet shows a temperature scarcely differing from that of other sweet springs in its neighbourhood. Petroleum wells are not contained in the present list, which comprises the hot springs between $8\frac{1}{2}^{\circ}$ to 36° Latitude North, and 67° to $88\frac{1}{2}^{\circ}$ Longitude East Green., Ceylon being excluded, as well as the Indo-Chinese peninsula (Tenasserim, Burmah, &c.)

To each locality, where a hot spring exists, the province is added, in which it is situated; of the abbreviations, which follow next, and which are contained in brackets, Ind. signifies "India; Him. = Himálaya; Tib. = Tibet; C. As. = Central Asia." "Un." means unknown; ab. = about. The geographical co-ordinates,—latitude, longitude, and height (Eng. feet) above the sea-level,—given almost for every locality, are taken from Vol. II. "Hypsometry of India and High Asia," of our "Results of a Scientific Mission to India and High Asia." The longitudes are referred to the Madras Observatory, for which we adopt $80^{\circ} 13' 56''$ Long. East Green.

With few exceptions, there are several springs existing at every one of the different localities; the temperatures given refer to the hottest of the springs at the respective locality.

Dr. Macpherson alludes in his memoir to the difficulties he experienced in verifying the localities of the hot and mineral springs "which in many instances, owing to strange transmutations of names were so great, that I cannot hope to have escaped mistakes." These are, however, very few in number, and they are noticed by me in the

* An extract has also appeared in this Journal, Vol. XXV. p. 197.

last column of the table, headed "Authorities and Remarks." In this column I have also added in chronological order the various describers of the respective springs, and the books and pamphlets in which their accounts have been published.

For the sake of comparison I add the temperatures of some of the most famous hot springs of Europe. These dates are taken from the "Einleitung in die Mineralquellen Lehre," by Dr. B. M. Lersch, Erlangen, 1855-60.

	Temp. Fahr.
Aachen: <i>Hottest spring</i> , - - - - -	166°
Baden-Baden: <i>Brühquelle</i> , - - - - -	155
Ems: <i>Rondelquelle</i> , - - - - -	131
Gastein: <i>Hottest spring</i> , - - - - -	119
Karlsbad: <i>Sprudel</i> , - - - - -	162½
Plombières: <i>Roman spring</i> , - - - - -	158
Schlangenbad: <i>Hottest spring</i> , - - - - -	90½
Teplitz: <i>Hottest spring</i> , - - - - -	121
Vichy: <i>Grand Puits</i> , - - - - -	113
Wildbad: <i>Herrenbad</i> , - - - - -	99½

Alphabetical List of the hot springs of India and High Asia.

No. Curr.	LOCALITIES.	GEOGRAPHICAL CO-ORDINATES.			Temperature Fahr.	AUTHORITIES AND REMARKS.
		Latitude North.	Longitude East above the Green.	Height above the sea-level.		
1	Alvár, in Rajvára,* (Ind.)	0	0		Un.	Macpherson, "The Mineral waters of India," p. 8.
2	Anavál, in Khandesh,	27 35	76 36	1,200	Un.	White, "Transactions R. As. Soc., 1833. The spring is called "Aunkel Devi."
3	Aráuli, in the Kónkan, (Ind.)	23 45	73 17		Un.	Ducommun, "Journ. Med. Phys. Science," Calcutta, Vol. III., p. 524.
5	Áskoli, in Balti, (Tib.)	35 41	75 56	9,710	168.8	Messrs. de Schlagintweit.
4	Arjána, in the Déshan, (Ind.)	19 50	78 46	Un.	87.0	Malcolmson, "Geolog. Transactions," 2nd series, Vol. V., p. 554.
6	Bádrinath, in Garhvál, (Him.)	30 46	79 20	10,124	128.9	Messrs. de Schlagintweit.
7	Báidra, in Berúr; (Ind.)	Un.	Un.	Un.	110.0	Malcolmson, "Geolog. Transactions," 2nd series, Vol. IV.; p. 565; J. As. Soc. B., Vol. II. p. 397.
8	Banássá, in Garhvál, (Him.)	30 56	78 23	7,478	160.0	Messrs. de Schlagintweit.
9	Barávi, in Bahar, (Ind.)	25 9	86 22	400	115.0	Sherrill, J. As. Soc. B., Vol. XXI., p. 198. Spring is called Janamkúnd.
10	Bargáú, in Gúizit, (Tib.)	36 0	74 10	Un.	Un.	Messrs. de Schlagintweit, from native information.
11	Belkápi, in Bahar, (Ind.)	24 9	85 38	1,219	190.0	Wilson, Trans. Med. Phys. Soc. Calcutta, Vol. III., p. 450; Hooker, "Himalayan Journals," Vol. I., p. 27; Messrs. de Schlagintweit. This is Macpherson's "Sooroojkund near Belkápi and Burkutta."
12	Bhadrachálam, in Oríssa, (Ind.)	17 41	80 53	202	140.0	Malcolmson, "Geolog. Transactions," 2nd series, Vol. V., p. 565; Messrs. de Schlagintweit.

* Remarks for the transcription of the names: vowels and diphthongs as in Italian and German; á = u in "but"; a = an in the French "gant." Consonants sound as in English. The sign ' marks the syllable to be accented.

No. Curr.	LOCALITIES.	GEOGRAPHICAL CO-ORDINATES.					Temperature Fahr.	AUTHORITIES AND REMARKS.
		Latitude North.	Longi- tude East Green.		Height above the sea-level.			
			°	'		°		
13	Bhātra, in Kūlu, (Him.)	31	54	76	51	Un.	Wade, J. As. Soc. B., Vol. VI., Part I., p. 153. This is Macpherson's "Lahad Khad."	
14	Bhūmband, in Babar, (Ind.)	25	3	86	23	450	Sherwill, J. As. Soc. B., Vol. XXI., p. 199. The springs are called Mohadeva and Damdama.	
15	Bhīshēt, in Kūlu, (Him.)	32	17	77	10	6,622	Moorecroft, "Travels in the Himalayan provinces," Vol. I., p. 186; Marcadieu, J. As. Soc. Beng., Vol. XXIV., p. 200; Messrs. de Schlagintweit.	
16	Chāgrar, in Pangkōng, (Tib.)	34	2	78	6	ab. 15,000	Messrs. de Schlagintweit.	
17	Chatargārh, in Kishtvār, (Him.)	33	3	76	16	Un.	Messrs. de Schlagintweit, from native information.	
18	Chittūr, in Rajvāra, (Ind.)	24	52	74	1	1,100	Hardie, As. Res., Vol. XVIII., part II., p. 53.	
19	Chorkōnda, in Bālti, (Tib.)	35	31	75	58	11,594	Messrs. de Schlagintweit.	
20	Chūa, in Chāmba, (Him.)	32	8	76	30	Un.	Messrs. de Schlagintweit.	
21	Chūshul, in Pangkōng, (Tib.)	33	31	78	36	14,406	Moorecroft, "Travels in the Himalayan provinces," Vol. I., p. 436; Messrs. de Schlagintweit.	
22	Chuttrōn, in Bālti, (Tib.)	35	51	75	50	9,970	Messrs. de Schlagintweit.	
23	Darjiling, in Sikkim, (Him.)	27	3	88	15	ab. 1,900	Sinault, "Guide to Darjiling," Calcutta, 1843, p. 15.	
24	Devāt, in Chāmba, (Him.)	32	6	76	42	4,410	Messrs. de Schlagintweit.	
25	Gaurikūnd, in Garhvāl, (Him.)	30	36	79	3	6,417	Messrs. de Schlagintweit. This is Macpherson's spring at "Kidarnath."	
26	Hatbhōllia, in Babar, (Ind.)	24	11	87	15	310	Sherwill, "Report on Bhargulpore," Calcutta, 1854, p. 25.	
27	Hazaribāgh, in Bengāl, (Ind.)	24	0	85	21	1,750	Everest, "Gleanings in Science," Vol. III., p. 134. This is Macpherson's "Katkamsandi."	
28	Hushangabad, in Māiva, (Ind.)	22	45	77	42	1,050	Splashbury, "Gleanings in Science," Vol. III., p. 17. and Transact. Med. Phys. Soc., Calcutta, Vol. III., p. 450. The springs are called "Anhōni Samōni."	
29	Imlia, in Kāmāson, (Him.)	30	2	80	2	Un.	Messrs. de Schlagintweit, from native information.	

30	Jaggarnáth, in Orissa, (Ind.)	..	19	48	85	46	40	Un.	<i>Brander</i> "Transact. Med. Phys. Soc." Calcutta, Vol. IV., p. 382. This is Macpherson's "Uteer, 30 miles from Poore."
31	Jáipur, in Rajvára, (Ind.)	..	26	56	75	52	320	Un.	<i>Macpherson</i> , "The Mineral waters of India," p. 8.
32	Jamunóri, in Garhwal, (Him.)	..	31	0	78	29	9,793	192.6	<i>Hodgson</i> , As. Res., Vol. XIV., p. 147; <i>Jacquemont</i> , "Voyage dans l'Inde," Journal, Vol. II., p. 89; <i>Messrs. de Schlögiatweit</i> .
33	Jánglung, in Núbra, (Tib.)	..	35	0	77	8	11,890	165.8	<i>Messrs. de Schlögiatweit</i> .
34	Jauri, in Simla, (Him.)	..	31	32	77	48	Un.	Un.	<i>Gerard</i> , "Koonawur," p. 142.
35	Kaljhúrná, in Bahár, (Ind.)	..	Un.	Un.	Un.	Un.	Un.	Un.	<i>Macpherson</i> "The Mineral waters of India," p. 7, quotes Sherwill as authority, which must be a mistake.
36	Kálva, (Ind.)	..	..	..	..	..	..	Un.	<i>Newbold</i> , "Madras J. Lit. and Science," Vol. XII. or XIII., p. 16.*
37	Kelát, in Kúlu, (Him.)	..	32	14	77	12	5,700	104.0	<i>Cunningham</i> , Journ. As. Soc. B., Vols. X., part I., p. 3, and XVII., part I., p. 208; <i>Marcondieu</i> , Journ. As. Soc. B., Vol. XXIV., p. 200; <i>Gerard</i> , "Koonawur," p. 142; <i>Messrs. de Schlögiatweit</i> .
38	Khair, in the Dékhan, (Ind.)	..	19	55	78	52	Un.	87.0	<i>Yule</i> , <i>Messrs. de Schlögiatweit</i> .
39	Kharsáli, in Garhwal, (Him.)	..	30	57	78	27	8,653	72.1	<i>Messrs. de Schlögiatweit</i> .
40	Kisk-kió, in Turkistan, (C. As.)	..	35	40	77	56	15,010	120.2	<i>Messrs. de Schlögiatweit</i> .
41	Knárung, in Ladák, (Tib.)	..	34	1	76	59	Un.	Un.	<i>Macgregor</i> , "Travels in the Himalayan provinces," Vol. I., p. 416.
42	Kyám, in Pangkóng, (Tib.)	..	34	14	78	31	ab. 11,000	147.0	<i>Messrs. de Schlögiatweit</i> .
43	Lákhi, in Sindh, (Ind.)	..	26	16	67	51	150	104.5	<i>Messrs. de Schlögiatweit</i> .
44	Lanjabánda, in the Dékhan, (Ind.)	..	15	30	78	1	1,250	91.3	<i>Newbold</i> , Journ. As. Soc. B., Vol. XIII., part I., p. 315. Macpherson's "Sunjabanda" is a misprint for "Lanja-bánda."
45	Mággar Púr, in Sindh, (Ind.)	..	24	50	66	58	50	106.2	<i>Cordess</i> , "Transactions Bombay Geogr. Soc." Vol. II., p. 14. Journ. As. Soc. B., Vol. XVII., part II., p. 230; <i>Messrs. de Schlögiatweit</i> .
46	Mahanándi, (Ind.)	..	..	..	..	..	..	Un.	<i>Newbold</i> , "Madras J. Lit. and Science," Vol. XII. or XIII., p. 162.
47	Maharu, in Bahár, (Ind.)	..	24	41	87	13	360	Un.	<i>Shawell</i> , "Report on Bhaugulpore," Calcutta, 1854, p. 25.

* I was unable to procure this Journal.

No. Cont.	LOCALITIES.	GEOGRAPHICAL CO-ORDINATES.				Temperature Fahr.	AUTHORITIES AND REMARKS.
		Latitude North.	Longitude Green.	Height above the sea-level.			
48	Manikárn, in Kûln, (Him.)	32 2	77 22	5,587	202.0	Marcadieu, J. As. Soc. B., Vol. XXIV., p. 199. Moorcroft, "Travels in the Himalayan provinces," Vol. I., p. 177; Messrs. de Schlagintweit.	
49	Mat, in the Kónkan, (Ind.)	16 57	73 31	Un.	Un.	Duncan, "Journ. Med. Phys. Science," Calcutta, Vol. III., p. 524.	
50	Momái, in Sikkim, (Him.)	27 52	88 40	ab. 16,000	110.0	Hooker, "Himalayan Journals," Vol. II., pp. 133 and 180.	
51	Móngghir, in Bengal, (Ind.)	25 27	86 40	200	140.0	The spring is called "Sitakúnd" Sherwill, "General remarks on the district of Monghyr." Calcutta; Hooker, "Himalayan Journals," Vol. I., p. 88; Messrs. de Schlagintweit.	
52	Múlbe, in Dras, (Tib.)	34 20	76 13	10,990	78.6	Messrs. de Schlagintweit. [Schlagintweit.	
53	Musakhét, in the Pánjáb, (Ind.)	32 43	71 39	706	94.0	Fleming, "Journ. As. Soc. B., Vol. XXII., p. 265; Messrs. de	
54	Múshkin, in Hasóra, (Tib.)	35 25	74 51	Un.	Un.	Messrs. de Schlagintweit, from native information.	
55	Nákthan, in Kûln, (Him.)	31 58	77 29	ab. 6,200	Un.	Messrs. de Schlagintweit, from native information.	
56	Nátssa, in Simla, (Him.)	31 40	77 53	ab. 3,580	137.0	Gerard, "Koonawur," p. 142; Messrs. de Schlagintweit.	
57	Nilt, in Gálgit, (Tib.)	Un.	Un.	Un.	Un.	Messrs. de Schlagintweit, from native information.	
58	Núnbhul, in Bahár, (Ind.)	24 11	86 59	300	Un.	Sherwill, "Report on Bhaugulpore," Calcutta, 1854, p. 25.	
59	Pachét, in Bahár, (Ind.)	23 36	86 48	420	Un.	Journ. As. Soc. Beng., Vol. II., p. 46.	
60	Pahárpur, in Bahár, (Ind.)	25 22	86 41	320	114.1	Sherwill, "J. As. Soc. B., Vol. XXI., p. 204; Messrs. de Schlagintweit. The spring is called "Rishikúnd," Sherwill's "Kishikund" (Report on Bhaugulpore, 1854, p. 2.) being a misprint for "Rishikund."	
61	Pámpur, in Kashmír, (Him.)	33 59	74 55	5,250	70.0	Hügel, "Kaschnir und das Reich der Siék," Vol. I., p. 260; Messrs. de Schlagintweit.	
62	Pangnúg, in Núbra, (Tib.)	34 46	77 12	10,538	172.2	Moorcroft, "Travels in the Himalayan Provinces," Vol. I., p. 406; Thomson, "Western Himalaya and Tibet," p. 407; Messrs. de Schlagintweit.	

		24	44	80	12	Un.	Un.	
64	Pékar, in Gilgit, (Tib.)	Un.	Un.	Un.	Un.	Un.	Un.	Macpherson, "The Mineral waters of India," p. 8, on the authority of Capt. Franklin, which seems to be a mistake. Messrs. de Schlagintweit, from native information.
65	Pinarkun, in Bahar, (Ind.)	Un.	Un.	Un.	Un.	Un.	Un.	Macpherson, "The Mineral waters of India," p. 8, on the authority of Breton, which seems to be a mistake (see Trans. Med. Phys. Soc., Calcutta, Vol. II., p. 237, and "Sargitja.")
66	Puári, in Kanáur, (Him.)	31	33	78	18	6,555	125.0	Messrs. Schlagintweit; seems to be "Bokti" of Gerard, "Koonawur," p. 14.
67	Púga, in Ladák, (Tib.)	33	12	78	25	15,264	174.0	Cunningham, "Ladák," p. 144. Thomson, "Western Himalaya and Tibet," p. 164; Messrs. de Schlagintweit. Sherwill, Journ. As. Soc. B., Vol. XV., p. 59.
68	Rajgr, in Bahár, (Ind.)	25	2	85	25	Un.	Un.	Duncan, Journ. Med. Phys. Science, Calcutta, Vol. III., p. 524.
69	Rajvárí, in the Kónkan, (Ind.)	17	14	73	35	Un.	Un.	Duncan, ditto ditto ditto.
70	Sangaméshvar, in the Kónkan, (Ind.)	17	11	73	35	Un.	Un.	Breton, "Trans. Med. Phys. Soc., Calcutta, Vol. II.; p. 237; Ouseley, J. As. Soc. B., Vol. XVII., part I., p. 67.
71	Sargúja, in Bahár, (Ind.)	23	8	83	5	Un.	186.0	Duncan, "Journ. Med. Phys. Science," Calcutta, Vol. III., p. 524.
72	Sávi, in the Kónkan, (Ind.)	18	5	73	24	Un.	109.0	Gerard, "Koonawur," p. 142; Messrs. de Schlagintweit. Messrs. de Schlagintweit, from native information.
73	Shákar, in Spítí, (Tib.)	32	0	78	38	10,600	120.0	Ditto ditto
74	Sheolór, in Kashmir, (Him.)	34	21	74	14	Un.	Un.	Colonel Todd.
75	Shogóre, in Chitrál, (C. As.)	35	8	72	4	Un.	Un.	Sherwill's "Madhuban," (notes on Bahar, Calcutta); Kitoe's "Taproban," (see Journ. As. Soc. Beng., Vol. XVII., part I., p. 235).
76	Sitabári, in Málva, (Ind.)	Un.	Un.	Un.	Un.	Un.	Un.	Messrs. de Schlagintweit.
77	Sitáúra, in Bahár, (Ind.)	25	3	85	29	Un.	110.0	Ludlow, "Trans. Med. Phys. Soc., Calcutta, Vol. III., p. 20; "Gleanings in Science," Vol. II., p. 44. Martin, "Journ. As. Soc. B., Vol. XII., part I., p. 270; Jacquemont, "Voyage dans l'Inde," Journ. Vol. III., p. 337. Briggs, cited by Sykes "Geological Transactions," 2nd series, Vol. IV., p. 427.
78	Sobóra, in Rajáuri, (Him.)	33	40	73	49	2,200	...	Ravenshaw, "Gleanings in Science," Vol. III., p. 17; Gerard, "Koonawur," p. 142; Messrs de Schlagintweit.
79	Sóna, in Hindostán, (Ind.)	28	14	77	3	ab. 800	108.0	
80	Snápdeó, in Khandésh, (Ind.)	Un.	Un.	Un.	Un.	Un.	Un.	
81	Súni, in Símla, (Him.)	31	15	78	8	2,127	135.0	

No. Curr.	LOCALITIES.	GEOGRAPHICAL CO-ORDINATES.				Temperature Fahr.	AUTHORITIES AND REMARKS.	
		Latitude North.	Longitude East of Greenwich.		Height above the sea-level.			
			°	'				°
82	Tantipára, in Bahár, (Ind.)	23	52	87	21	290	162.0	Sherwill, "Geographical Report of Beerbhoom," Calcutta, 1855, p. 14. The spring "Lakarakúnd" (temp. 80°0) is five miles off.
83	Tantui, in Bahár, (Ind.)	24	3	87	16	350	150.0	Sherwill, "Geographical Report of Beerbhoom," Calcutta, 1855, p. 22.
84	Tapubén, in Garhvál, (Him.)	30	28	79	36	6,182	..	Messrs. de Schlagintweit.
85	Teve, in Chámbe, (Him.)	32	8	76	12	1,602	106.5	Marcadieu, "Indian Annals of Medical Science," Calcutta, 1855, No. IV., p. 532. Messrs. de Schlagintweit.
86	Terthapúri, in Gnári Khórsum, (Tib.)	31	11	80	34	Un.	Un.	Moorcroft, "As. Res." Vol. XII., p. 459.
87	Túlsi Sham, in Kattivár, (Ind.)	21	4	71	6	ab. 800	124.0	Le G. Jacob, "Report upon the province upon Kattivár," Bombay, 1845, p. 36. This is Macpherson's spring at "Omea."
88	Túril, in the Kónkan, (Ind.)	17	15	73	33	Un.	Un.	Duncan, "Journ. Med. Phys. Science," Calcutta, Vol. III., p. 524.
89	Uch, in the Panjáb, (Ind.)	29	13	71	1	Un.	Un.	Kirk, "Med. Topography of Sindh," Calcutta, 1847, p. 22.
90	Unáli, in the Kónkan, (Ind.)	16	38	73	33	Un.	Un.	Duncan, "Journ. Med. Phys. Science, Calcutta, Vol. III., p. 524.
91	Unapdéo, in Khandésh, (Ind.)	21	25	75	16	Un.	Un.	Briggs, cited by Sykes, "Geological Transactions," 2nd series, Vol. IV., p. 427.
92	Unári, *	17	36	73	21	} Un.	Un.	Duncan, "Journ. Med. Phys. Science," Calcutta, Vol. III., p. 524.
93	Unári, }	18	33	73	14		Messrs. de Schlagintweit. This is Macpherson's spring at Hughes "Allen's Indian Mail," London, Oct. 17, 1859.	
94	Unári, }	17	57	73	13	Un.	111.0	White, "Transactions R. As. Society," 1833.
95	Uri, in Garhvál, (Him.)	30	54	78	41	6,252	139.8	Messrs. de Schlagintweit.
96	Vajrabháí, in the Kónkan, (Ind.)	19	30	73	3	Un.	136.0	This is Macpherson's spring at Hughes "Allen's Indian Mail," London, Oct. 17, 1859.
97	Véval, in Khandésh, (Ind.)	20	47	73	19	Un.	111.0	White, "Transactions R. As. Society," 1833.
98	Vódri, in Garhvál, (Him.)	30	53	78	21	5,384	94.3	Messrs. de Schlagintweit.
99	Yómtóng, in Síktim, (Him.)	27	46	88	43	11,730	112.6	Hooker, "Himalayan Journals," London, 1854, Vol. II., [p. 116.

* Unáli, or Unári, says Mr. Duncan in the "India Journal of Physical and Medical Science," Calcutta, Vol. III., p. 524, is the term the hot springs are known in the Kónkan. Hence it has been given to so many villages contiguous to them.

*Memorandum upon some ancient Tiles obtained at Pagan in Burma.—**By Lt.-Col. A. P. PHAYRE.*

I send herewith four tiles having Buddhist figures and inscriptions which were discovered at Pagan. They were given to me by the principal Monk of a Buddhist Monastery there. I only saw one of the four kinds in the original site; viz. the tile marked No. 1. The Monk assured me that all were found in different parts of the ruined city, but he did not wish me to go to the several sites, being apparently afraid that I should carry away too many, and that he might be blamed for being instrumental in injuring ancient pagodas. As my visit on this occasion was a hurried one, I had not time to discuss the matter with the old Phoon-gyee, who was exceedingly obliging, but he gave me one of his scholars to show me the place where the tile No. 1 was discovered.

It was the ruins of a small solid pagoda. In one corner the foundation at the level of the ground was exposed. The tiles like that marked No. 1, were laid on edge, and apparently formed the upper layer of the arch of the relic chamber. The hollow portion of the tiles was filled with sand partially mixed with lime to resist pressure. Bearing in mind the fears of the Phoon-gyee I brought none of the tiles away with me, but after inspecting a few, replaced them.

I now proceed to describe the tiles.

No. 1 bears thirty figures of Budhas. Of these two which are distinguished from the rest are evidently the figures of Gautama. The remaining twenty-eight are apparently intended to represent the Budhas of an antecedent period. At the bottom of the tile are two lines in the Deva Nagri character. On the back are inscribed seven lines in rude Burmese characters, and in the Ma-ga-da, or Pali language. I give them in the Roman character as follows:

Ata wisa ti mé budhá
 Tí gi thu mé ká tsa tha ha
 Budhat ta ya Tat tat ta ya
 Thabbau matu pitu a ya
 Tsa ri ya putta ra rátsa
 Thabba that ta hitá pitsa
 Budhau hitháti nága teti.

No. 2. This tile has eight groups or compartments of figures. Each no doubt represents a marked event or scene in the life of Gautama Budha though I cannot recognise all. The first is the group in the right hand, lower corner. It represents the birth of Gautama. He is issuing from the right side of his mother who grasps the *Shorea robusta* tree above her head, and is attended by her sister. The figure at the top where Gautama is seen reclining represents his death in the country of Koothinaron. At the foot are two lines of writing in ancient Deva Nagri character.

No. 3. A figure of Gautama Budha seated on a sort of throne and his feet on a foot-stool. Around him are what appear to be intended to represent pagodas or relic caskets. The modern pagodas of Burma and Siam appear to have been fashioned after such-like models. There is a Deva Nagri inscription below the figure.

No. 4, is a small tile in the shape of the leaf of the *Ficus religiosa*. It bears a figure of Gautama in the usual attitude of reflection, and a Deva-Nagri inscription below.

LITERARY INTELLIGENCE, CORRESPONDENCE, &c.

Dr. Weber writes to Mr. Cowell from Berlin, November 9th, 1863.

"Out of the many interesting news contained in your letter of June 5th, that about the Elliot collection of course claims the greatest attention. Mr. Austin's estimate for the cost of printing appears exceedingly moderate. Your Sanskrit College edition of the Siddhānta Kaumudī will be welcomed very heartily, as it may be used as a text-book in our Universities' Sanskrit Courses. The Nāgānanda too will be very welcome. Your translation of the Kusumānjali must be hard work and will do us a great service.

Bāṇa's Harshacharitra is a work which seems of the utmost importance, to judge after the notices which we owe to Mr. Hall about it. I cannot as yet reconcile myself to the idea that the author of such a dull and clumsy work as the Kādambarī, should have lived in the seventh century, *before* Bhavabhūti wrote his dramas, which indeed show already *symptoms* enough of a kindred style, but still appear in that regard more to resemble a weak stem, whereas a Kādambarī is to be likened to a nyagrodha-wilderness.

The second part of M. Pictet's "*Origines Indo-europeennes*" has now appeared. It is a great pity that he is no better Sanskrit scholar. The principles laid out and followed throughout his work are the very best, his assiduity and ardour deserve the highest praise, but the results, alas, are rather too often of a too questionable character to admit of acknowledgment or adoption. Professor Spiegel has just now published a series of old and new papers on "Erān" (this is the title of his book): two of them on the relation of the Avesta to the Veda and to the Genesis will be of particular interest: I have not yet read them, but I saw Spiegel in Meissen and we spoke to him about these themes. That meeting in Meissen was a very interesting one, forty members of our German Oriental Society being present (a larger number, than ever hitherto). Professor Wright is now to print under the patronage of our Society an old Arabian grammar, the Kāmil of al-Mubarrad (about 800 pages quarto). Dieterici is occupied with his translation of the treatises of the Ikhwān uṣ ṣafā. Gosche has given out a prospectus for an edition of the Muṣāḍḍḥaliyāt, a collection of old Arabic poetry. Amari's publication of the state documents of

treaties between Venice etc. and the Moslems is highly praised. Emil Schlagintweit's Buddhism in Tibet with a copious Atlas of original drawings and pictures from the temple shrines of Tibet (representing Buddhist gods, saints and symbols) is a work of great interest. Curious enough, I found among these pictures the exact counterpart to a stone figure of Mañjuçri, deposited now in our Royal Museum here, but imported from Java, and containing two Sanskrit inscriptions in old character (from Çaka 1265), a decyphering and translation of which Dr. Friederich left with me (for the Journal of our Society) on his departure for Java at the end of February last. Five centuries between, and still the same picture in Java and in Tibet,—this is indeed a mark of much tenacity to the old form of representing this deity (or half god), and at the same time also an evidence for its even much higher antiquity. The last proof sheet of the Petersburg Worterbuch went to पृष्ठ and I think that number 5 of the fourth volume will soon be ready. The twelfth vol. of Kuhn's Zeitschrift für vergleichende Sprachforschung is finished. It is a great pity, that Kuhn has not more leisure to devote to his studies on comparative mythology : he is professor at a Gymnasium (high school) and his time very much restricted. Windischmann's Zoroastrische Studien (edited by Spiegel) is a very excellent work. The author (a Catholic clergyman of high distinction in Munich) combined Burnouf's method with a very deep and successful study of the Pehlvi literature : his premature death is a great loss for science. The first volume of Boehtlingk's collection of Sanskrit "Sprüche" appeared in July : to the text (alphabetically arranged) is added the translation, and at the foot the enumeration of all the passages, where the verse is occurring, and the *varietas lectionis*. The second part is to contain the rest (from पृ to ३) and ample indices to the whole.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR NOVEMBER, 1863.



The monthly general meeting of the Society was held on the 4th instant.

E. C. Bayley, Esq., President, in the chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received—

1. From His Highness the Maharajah of Benares, a copy of the Rev. M. A. Sherring's lecture on "Benares and its Antiquities."

2. From Baboo Rajendra Mallika, a dead blue and yellow Macaw.

3. From His Honor the Lieutenant-Governor of Bengal, a meteoric stone, which fell at Shytaal near Dacca, on the 11th August, the fall of which was announced at the last meeting.

4. From Prince Mohammad Jallaluddin, a specimen of a dead snake—*Bungarus Candidus*.

5. From Colonel R. C. Tytler, a collection of zoological specimens.

6. From His Excellency the Viceroy, a stone Buddhist figure, with an inscription, from Sahet Mahet, the ancient Srāvasti.

The President announced that a pension of £150 a year had been granted to the Society's Curator, Mr. E. Blyth, to take effect from the 1st January, 1863.

READ LETTERS.

From Colonel J. C. Haughton to the President, giving an account of a large collection of coins lately found at a place called Gosain Maree, about 14 miles S. S. W. from Cooch Behar.

From Captain Speke, acknowledging the vote of thanks of the Society, and announcing his proposed expedition to discover the source of the Congo.

From Captain H. H. Godwin Austen, giving an account of the discovery of some coins at Islamabad.

o. From R. H. Barnes, Esq., returning thanks to the Society for his election as a corresponding member.

A letter from Dr. G. Gordon, intimating his desire to withdraw from the Society, was recorded.

The following gentlemen, duly proposed at the last meeting were balloted for and elected ordinary members :—

Dr. J. McLelland ; W. P. Duff, Esq. ; Dr. Ferd. Stoliczka ; R. T. Martin, Esq. ; Major J. G. Gowan ; Baboo Modhoosoodun Doss, and H. D. Sandeman, Esq.

The following gentlemen were named for ballot as ordinary members at the next meeting :—

The Rev. M. D. C. Walters, Chaplain of Calcutta, proposed by Mr. Cowell and seconded by Mr. Grote.

A. G. Walker, Esq., proposed by Major Layard and seconded by Colonel Gastrell.

T. Dickens, Esq., Barrister-at-law, proposed by Mr. Blanford and seconded by Mr. H. C. Sutherland.

J. Forsyth, Esq., Bengal Staff Corps, proposed by Mr. R. A. Sterndale and seconded by Mr. Blanford.

The Rev. Mr. Corbyn introduced some aborigines of the Andaman Islands, and gave an interesting account of these people, with a short narrative of the circumstances which have led to the establishment of a friendly feeling between them and the settlers.

Thanks were unanimously voted to Mr. Corbyn for his interesting account of the Aborigines of the Andaman Islands.

After a few preliminary remarks on the ethnology of the Andamanese, Mr. Blanford stated that he was doubtful whether the intercourse opened will tend eventually to the civilization of the natives of the Andamans. He stated that the history of the New Zealanders and other barbarous people in Australia and America sufficiently warrants us to assume the broad fact that when two different races in very different states of civilization come in contact with one another, the more powerful race exterminates the less powerful, and that civilization, to be permanent, must be attained by gradual steps and mainly be developed from within, foreign influence being but a secondary agent.

Mr. Cowell could not concur in the opinion of Mr. Blanford ; on the contrary he believed that history generally bears out the fact that nations cannot rise in civilization without an influence *ab extrinseco*. He quoted some instances from ancient history in support of this view.

The President remarked that without entering into the abstract question raised by Mr. Blanford, it might perhaps be doubted if the facts cited by him fully warranted in their entirety the conclusions at which he had arrived.

No doubt it was unfortunately true that in the majority of cases in which a race of high civilization had come into contact with another of a very inferior civilization, the result had been fatal to the latter. It was unnecessary here to discuss the causes which had contributed to produce this effect. The President, however, would call the attention of the meeting to one instance which he believed proved at least that an exception might exist to the general rule. The Laps whom Mr. Blanford had cited as forming a part of the same brachycephalic family to which the Andamanese belonged, had been for some time (for more at least than a century and a half) in contact on either side with Swedish and Russian civilization, and however it might be the fashion to decry the character of the latter, there could in reality be no doubt that it was civilization of the highest order, especially in that part of Russia which bordered on the territory of the Laps.

Now, the result had certainly not been in this case the extermination of the Laps; indeed, though not speaking on accurate information, the President believed that the Laps had neither diminished in numbers nor deteriorated in condition, since the commencement of the last century.

But whatever might be the opinion of the meeting on the merits of Mr. Blanford's general proposition, it was important to remember that in the present case the question was not whether or not we should leave the Andamanese alone, for the commencement of our intercourse with them was unavoidable. These islands lie in the very track of a very important and daily increasing line of commerce. They contain what are in reality the only harbours of refuge within the Bay of Bengal. It had been already constantly pressed upon Government that it was their duty for the protection of these our subjects, and those of other nations trading in these seas to reclaim these Islands now abandoned to a barbarous and hostile population. No doubt these considerations have sooner or later made interference inevitable. The establishment of a penal colony which the necessities of jail discipline in India had compelled Government to form, only hastened the event.

It was beyond denial that the commencement of such an intercourse with this uncivilized race involved grave moral responsibilities, and these could not be approached without anxious consideration.

But the question was not now, whether this intercourse should be commenced at all, but by what means and in what manner it could be most humanely and successfully commenced.

So far as they had gone, Mr. Corbyn's endeavours had been unusually happy, and promised most favorably for the future. No doubt further efforts would be made in the same direction, and it was to be hoped with the same prosperous result. It might indeed be otherwise, but at any rate it was the duty of the more civilized race to omit no effort to avoid the evils which had hitherto resulted from its contact with those of the lower grades of civilization, and the meeting would doubtless consider that Mr. Corbyn was entitled to all praise for the patience, tact, and humanity which had hitherto distinguished his efforts to reclaim and civilize the Andamanese.

Communications were received—

1. From Rev. I. Loewenthal, a paper on some Persian inscriptions found in Srinagar, Kashmir.

2. From Baboo Gopinath Sen, Abstract of the hourly Meteorological Observations, taken at the Surveyor General's office, for the month of August last.

3. From W. Theobald, Esq., Jr. a paper on the variation of some Indian and Burmese Helicidæ, with an attempt at their re-arrangement, together with description of new Burmese Gasteropoda.

4. From Professor J. Dowson, through E. Thomas, Esq., remarks on Major General Cunningham's paper on the *Taxila* inscription.

Mr. Cowell read some extracts from a paper by Colonel Abbott on the site of Aornos.

Mr. Cowell, having read extracts from the paper, Major Walker made some comments on the subject of it, and stated that so far as he was aware of the merits of the question he would adopt the position as given by Mr. Loewenthal in opposition to Colonel Abbott's arguments.

In consequence of the lateness of the hour the paper of Mr. Loewenthal on some Persian inscriptions was not read, and the meeting separated.

FOR DECEMBER, 1863.

The monthly general meeting of the Society was held on the 2nd instant.

A. Grote, Esq., in the chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received—

1. From the Assistant Secretary to the Government of India, Foreign Department—a copy of a report by R. H. Davies, Esq., on the trade of Central Asia.

2. From Baboo Ganendra Mohun Tagore, Professor of Hindoo Law in University College, London—a pamphlet containing the substance of a lecture delivered by him before the Ethnological Society of London, “On the formation and institution of the caste system—the Aryan polity.”

3. From Baboo Prosonno Coomar Tagore—a copy of his English translation of *Vivāda Chintāmani* from the original Sanskrit of Vāchaspati Misra.

4. From his Highness the Mahārajah of Burdwan—a copy of the *Adi* and the *Sabhā parvas* of the Mahābhārata in Sanskrit, with a Bengali translation, published under his auspices.

The following gentlemen duly proposed at the last meeting were balloted for and elected ordinary members:—The Rev. M. D. C. Walters; A. G. Walker, Esq.; J. Forsyth, Esq.; and T. Dickens, Esq.

W. Murray, Esq., B. C. S. was then proposed by Mr. Cowell for ballot as ordinary member at the next meeting, seconded by Mr. Blanford.

The Secretary read the following report, which had been adopted by the Council, on a proposition submitted by Mr. C. Horne for facilitating a more extended correspondence on Natural History subjects:—

“The practicability of carrying out Mr. Horne’s proposition depends mainly on the assistance afforded by those interested in its accomplishment, the Council being unanimously of opinion that a published list of naturalists, numismatists, and others would be of great assistance to those engaged in these studies, and it is believed that such a list would facilitate the exchange of duplicate specimens, and at the same time enable those interested in special subjects to know in what quarter to apply for information and assistance.

“ Much help for the formation of such lists may be afforded by members of the Society, and it is therefore recommended that, as a preliminary step, a circular with a blank form be forwarded to members of the Society, requesting them to insert the names and addresses of those collectors with whom they may be acquainted, and to specify the subjects wherein they are respectively interested ; at the same time members should be requested to state whether they wish their own names to appear in the proposed list, and to furnish similar information with regard to themselves, as well as to mention any specimens which they might wish to offer as exchanges.

“ It would, in the next place, be necessary to apply directly to those gentlemen who, not being members of the Society, may be indicated by the latter as collectors, in order that their assent to the publication of their names, and perfectly authentic information respecting their requirements, &c., may be obtained ; and they might be asked at the same time to communicate to the Society the names of others with whom they may be acquainted, and who may in like manner wish their names to be recorded. In all cases, however, no name or details should be published that are not furnished or mentioned by the individuals themselves.

“ The materials thus obtained should be classified in a manner hereafter to be determined upon, and the lists so formed, printed on fly-sheets for insertion at the end of each number of the *Journal*. It might be found desirable also to append authentic information as to those who may be engaged in the working out of any special subject with a view to publication.”

The Chairman, on the part of the Council, recommended that the reference of Capt Lees' amendment of Rule 77 to the Society at large be for the present deferred. This recommendation was made in consequence of the Council's having just appointed a committee to revise the rules generally. It seemed expedient to include in one reference other amendments of the rules which might result from this revision.

Communications were received—

1. From Baboo Gopinath Sen—an abstract of the hourly meteorological observations taken at the Surveyor General's office in September last.
2. From Major J. T. Walker, Superintendent G. T. Survey—report of the operations of the G. T. Survey of India during 1862-63.

Mr. Oldham was then invited to read his paper submitted in October, entitled "Notes on the Fossils in the Society's Collection reputed to be from Spiti;" and that gentleman, after objecting to the postponement of the paper, proceeded to read it.

The Chairman remarked on the objections raised by Mr. Oldham, that his paper, though announced at the October meeting, had not been read on account of Mr. Oldham's absence from that and the following meeting.

An interesting discussion ensued between Mr. Oldham and Mr. Blanford as to the identity or otherwise of these fossils with those of the Gerard collection.

Mr. Oldham then exhibited to the Society a small collection of stone implements which had very recently been discovered by Messrs. King and Foote of the Geological Survey of India, near Madras. These were all of the ruder forms, so well known as characterizing the flint implements which had excited so much attention within the last few years in Europe. They were all formed of dense semi-vitreous quartzite—a rock which occurred in immense abundance in districts close to where these implements had been found, and which formed a very good substitute for the flints of north Europe. This was the first instance in which, so far as he knew, such stone implements had been found in India *in situ*. True celts of a totally different type and much higher finish, and in every respect identical with those found in Scotland and Ireland, had been met with in large numbers in Central India, but never actually imbedded in any deposits. They were invariably found under holy trees, or in sacred places, and were objects of reverence and worship to the people, who could give no information as to the source from which they had been originally gathered together. A single and very doubtful fragment of a stone implement had been found by Mr. W. Theobald, Junior, in examining the deposits of the Gangetic plains near the Soane river. This occurred in the Kunkurry clay of that district; but, with this exception, he was not aware of any stone implements, of any kind, having previously been noticed *in situ* anywhere in India. Those now on the table had been collected partly by himself, from a ferruginous lateritic gravel bed, which extended irregularly over a very large area west of Madras. In places this was at least fifteen feet below the surface, cut through by streams, and in one such place from which

some of the specimens on the table were procured, there stood an old ruined pagoda on the surface, evidencing that, at least at the time of its construction, that surface was a permanent one. This bed of gravel was in many places exposed on the surface and had been partially denuded; and it was in such localities where these implements had been washed out of the bed and lay strewed on the surface that they were found most plentifully.

Mr. Oldham remarked on the great interest attaching to such a discovery, and on the probable age of the deposit in which they occurred. Another point of interest connected with the history of such implements was the remarkable fact that, while scattered in abundance over the districts where they occurred, were noble remains of what would by many be called Druidical character-circles of large standing stones, cromlechs, kistvaens, often of large size and well preserved, all of which were traditionally referred to the Karumbers, a race of which there still existed traces in the hills; still all the weapons and implements of every kind found in these stone structures were invariably of iron. No information whatever regarding these stone implements could be obtained from the peasantry, who had been quite unaware of their existence.

Thanks were unanimously accorded to Mr. Oldham for his interesting remarks on the stone implements.

FOR JANUARY, 1864.

The annual general meeting of the Asiatic Society was held on the 13th instant.

E. C. Bayley, Esq., President, in the chair.

The Secretary read the following Annual Report for 1863:—

ANNUAL REPORT.

The Council of the Asiatic Society have much satisfaction in announcing that the marked prosperity of the Society during the past year has been fully equal to that of the previous years, indicating an ever-increasing interest in the objects of the Society on the part of the public, which augurs well for the future progress of Indian science.

It is, however, with feelings of deep regret that the Council have to record the decease of the Society's patron, the Right Hon'ble the Earl of Elgin and Kincardine, whose cordial sympathy with the

objects of the Society has been manifested on all occasions when the support or concurrence of the Government has been solicited by the Society.

During the past year the Society has received an accession of fifty-nine ordinary and two corresponding members, making a total of sixty-one. The loss by death (three) and retirement (twelve) has not exceeded fifteen members; so that the Council is enabled to congratulate the Society on a net increase of forty-four members, making an actual total of 355,* against 311 of the preceding year.

Baboo Sumbhoo Chunder Roy, Maharaja Narendra Narain Bhupa, and Dr. J. Browne are the names of the deceased members.

FINANCE.

The amount received by way of contributions from members was Rs. 8,930-2-9, which is in excess of the collection of the previous year. Of this sum Rs. 1,792 were for admission fees, and the balance, Rs. 7,138-2-9, for quarterly subscriptions.

Annexed is a table showing the average collection of the previous ten years. The resulting sum does not exceed the collection of the year under review.

	<i>Rs.</i>	<i>As.</i>	<i>P.</i>
1853,	7,778	9	3
1854,	7,082	0	0
1855,	7,166	0	0
1856,	8,096	0	0
1857,	7,068	0	0
1858,	6,923	8	0
1859,	6,750	0	0
1860,	6,441	0	0
1861,	6,812	0	0
1862,	7,222	9	0

Total Rs., 71,339 10 3

* Resident Members,.....	129
Non-resident,	147
Absent,	79
Total,.....	355

The average being Rs. 7,133-15-5 per year.

The details of the accounts have been referred to auditors, and will be laid before the next monthly meeting.*

The probable income and expenditure of the Society for the next twelve months may be estimated as follows :—

Income.

Contributions,	Rs. 8000
Admission Fees,	1800
Journal,	600
Library,	400
Museum,	6000
Secretary's Office,	10
Coin Fund,	50
Total,	<u>16,860</u>

Expenses.

Journal,	Rs. 3,200
Library,	2,400
Museum,	7,200
Secy.'s Office,	1,900
Building,	500
Coin Fund,	150
Miscellaneous,	350
Total,	<u>15,700</u>

LIBRARY.

During the past year the library has received large additions, both by presentation and purchase.

In the Natural History Department, the most important additions have been Mr. Gould's large works on the Birds of Asia, purchased in England, and 30 vols. of the *Transactions of Leopoldino-Caroline Academy* (which completes the Society's set of that most valuable series up to the year 1851) from the late Dr. Walker's library.

In the Philological Department the *Codex Sinaiticus*, edited by Professor Tischendorf and presented by the Imperial Russian government, is the most note-worthy acquisition.

* Having been submitted to the March meeting and adopted, they are printed in the usual place at the end of the proceedings of the Annual General Meeting. Ed.

The total number of volumes, pamphlets, and periodicals added to the library during the year is 572.

With a view to the further improvement of the library, the Council have requested the Library Committee to enquire into, and especially report upon, its present condition, and to submit propositions for its future arrangement; so that future additions may be made systematically as the funds of the Society may permit, and in accordance with the demands of science. Special attention will be given to the completion of those serials or other works, deficient sets of which now exist in the library.

COINS.

The collection of these valuable relics has not received any accession of moment. The only addition deserving of mention is from Baboo Shibehunder Mullick, who presented a trove of silver Mahomedan coins from his zemindary in the Sunderbuns.

MUSEUM.

Owing to the severe illness of the Society's late curator, Mr. Blyth, which compelled that gentleman to proceed to England at the close of 1862, the museum has been deprived of the supervision of a professional curator during the whole of the year.

Dr. Jerdon has, however, most kindly given much time and attention to the collections while engaged in the preparation of his *Manual on the Natural History of India*, and Baboo Poorno Chunder Bysack having had charge of the collections mainly with a view to their preservation, the Council are enabled to report that the collections have been well cared for, and that recent additions have been mounted and arranged so as to be equally available with the former for study or inspection.

The collection of fossil remains of invertebrate animals and plants has been mounted, worked out, arranged, and catalogued, and the collections of birds' eggs remounted and arranged in a cabinet especially provided for that purpose.

The valuable series of stuffed quadrumana which had been hitherto exposed in one of the lower rooms, has been arranged in two large glass cases, and it is trusted that they have been placed beyond danger of future deterioration. A new case has been provided for the Society's models and specimens of meteorites, and insect cabinets have been ordered from England at a cost of Rs. 500; a cabinet of slide

drawers for the reception of duplicates and specimens under examination has also been provided.

The Society's collection of Indian meteorites was transmitted to Professor Maskelyne in 1862, that gentleman having most kindly undertaken the charge of their chemical investigation and of their section with a view to the exchange of portions of them with the British Museum. The Society have now received from Professor Maskelyne a very beautifully-executed series of models of the original stones and portions of the stones themselves, together with a series of specimens of foreign meteorites presented by the Trustees of the British Museum.

They have also received, through the kindness of Dr. Haidinger, another valuable series from Dr. Hornes, Director of the Imperial Mineral Cabinet of Vienna, to which a set of Indian specimens had been presented by the Society.

In the Zoological Department the Society have received a set of upwards of 300 species of invertebrate fossils from Mr. H. F. Blanford, and numerous specimens of the mammals and birds of the Andaman Islands, with two almost entire skeletons of the natives of those islands, from Lieutenant-Colonel Tytler.

Captain Smyth has also presented several skins of Thibetan animals ;—these last, together with some skeletons of those animals that had been purchased by the Society and since mounted, form valuable representatives of the zoology of Thibet and Northern India.

In the Ethnological Department the collection of crania has received but few additions, but a considerable number of portraits of ethnological interest have been added to their photographic albums, chiefly from the Government of India.

The archaeological collection has received a slightly mutilated colossal figure of Buddha exhumed by General Cunningham at Sahet Mahet, the ancient Srāvasti in Oudh, presented by the Right Hon'ble the late Earl of Elgin. Its basement bears an important inscription, in which the name Srāvasti, of the place where it was found also occurs.

The Council are glad to be able to announce that the preliminary negotiations for the transfer of the Society's Museum to Government have now assumed a shape which permits of their being submitted to the Society at large, with a view to definite action.

The number of visitors to the Society's Museum has not diminished during the past year, amounting in average to 291 visitors per diem.

Natives.

Male,	96,629
Female,	5,924

Europeans.

Male,	2,545
Female,	1,384

Total,	106,482
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OFFICERS.

The Council have great pleasure in announcing that the home authorities have at last consented to grant a retiring pension of £150 per annum to their late Curator, Mr. Blyth. Mr. Blyth has for more than twenty years laboured most zealously in the cause of natural science in India; and it must be a cause of congratulation to the Society that his services have at length received this well-earned acknowledgement from the Home Government. He has been absent on sick leave in Europe during the whole of the past year.

The arrangements which have been sanctioned by the Council in consequence of his absence, will be submitted at a future meeting.

Baboo Poorno Chunder Bysack has officiated as assistant-curator since the last annual meeting.

The Librarian and Assistant-Secretary continues to discharge his duties to the entire satisfaction of the Council.

JOURNAL.

Five numbers of the *Journal* (including a supplementary number) have been published during the year; several valuable papers on Natural History and Archæology have been contributed, and the supplementary number possesses great interest as containing General Cunningham's Report of his Archæological Survey in 1861-62.

BIBLIOTHECA INDICA.

Seventeen numbers of the *Bibliotheca Indica* have appeared during the past year, viz.—eight of the new series, and nine of the old.

In the new series, Pundit Prema Chandra Tarkabagish has completed his edition of the *Kāvyaḍars'a* of S'ri Daṇḍin, with his original

commentary, and Mr. Cowell has published the second part of the *Maitri Upanishad*.

Two new works have been also commenced of considerable interest, in two different departments of Oriental literature—the *Tabakát-i-Nasiri* in our series of Muhammadan historians, and the *Púrva Mímánsa Sutrás*.

The former is the chief authority of the early Muhammadan history of India, and is especially valuable for the *Bibliotheca*, as we had already published the history of Ziá-i Barní, which was expressly designed as its continuation. The latter takes up a branch of Hindoo philosophy which had hitherto been comparatively neglected; and the present publication will render the *Sutrás* of Jaimini, and the rare commentary of Sabara, available to European research. The Council hope ere long to be able to announce an edition of the *Yoga Sutrás*; the only one of the six philosophical systems of the Hindoos remaining unpublished.

In the old series we have to announce the completion of the edition of the *Vedánta Sutrás* with the commentary of Sankara Achárya and the gloss of Govinda Ananda, originally commenced by Dr. Roer, and subsequently continued by Pundit Ráma Náráyana Vidyáratna.

Baboo Rájendralál Mitra has issued two numbers of the *Taittiríya Bráhmána*, and Mr. Cowell two numbers of the *Taittiríya Sanhitá*.

The titles of the fasciculi of the new series are:—

1. The *Kávyúdarśa* of Śrī Dandin, edited by Pundit Prema Chandra Tarkabágíśa, Nos. 38, 39, 41, Fasc. III. IV. V.

2. The *Maitri Upanishad*, edited by Mr. E. B. Cowell, M. A., No. 40, Fasc. II.

3. The *Tabakát-i-Nasiri* by Minhajuddin Juzjani, edited by Captain W. N. Lees, LL. D. Nos. 42, 43, 45, Fasc. I., II., III.

4. The *Púrva Mímánsa Sutrás* of Jaimini, edited by Pundit Moheshchunder Nyáyaratna, No. 44, Fasc. I.

The titles of the fasciculi of the old series published during the year, are—

1. The *Vedánta Sutrás*, edited by Pundit Ráma Náráyana Vidyáratna, Nos. 195, 198, 199, 200, 201, Fasc. IX., X., XI., XII., XIII.

2. The *Taittiríya Bráhmána*, edited by Baboo Rájendralál Mitra, Nos. 196, 197, Fasc. XVII and XVIII.

3. The *Taittiríya Sanhitá*, edited by Mr. E. B. Cowell, M. A., Nos. 202, 203, Fasc. XVIII. and XIX.

The Report having been read, it was proposed by Colonel Thuillier, seconded by Mr. Grote, that it be adopted. The proposition being put to the vote was carried unanimously.

The meeting then proceeded to ballot for the Council and officers for the next year.

Colonel Thuillier and Mr. W. L. Heeley were appointed scrutineers, and at the close of the ballot the chairman announced the following result:—

Council—E. C. Bayley, Esq., President; Captain W. N. Lees, Dr. T. Anderson, Baboo Rajendralal Mitra, Vice-Presidents; Dr. J. Fayrer; E. B. Cowell, Esq.; Dr. S. B. Partridge; J. Obbard, Esq.; Lieut.-Col. C. H. Dickens; Lieut.-Col. J. E. Gastrell; Lieut.-Col. H. Hyde; H. Leonard, Esq.; Baboo Jadava Krishna Sing;—H. F. Blanford, Esq., and W. L. Heeley, Esq., Joint Secretaries.

The meeting then resolved itself into an ordinary general meeting.

The following presentations were announced—

1. From Col. Fytche, Commissioner, Tenasserim Division, British Burmah,—heads and horns of a male and a female double-horned rhinoceros, from the source of the Tenasserim river.

2. From Baboo Rajendra Mullick,—a dead hybrid goat, and a kangaroo.

3. From Baboo Shoshee Chunder Dutt,—a copy of his work entitled *Stray Leaves, or Essays, Poems, and Tales*.

4. From the Bombay Government,—a copy of a Sindi work entitled *Saswi and Punhu*.

5. From Captain F. Stubbs,—a number of coins collected at different times, in the Punjab and Delhi.

A vote of thanks to the above donors was proposed by the President, and carried unanimously.

Letters from Lieut.-Col. L. Pelly, Lieut. W. J. Stewart, Rev. J. C. Thompson, E. G. Glazier, Esq., and Saheb Zada Mohammad Walagohur, intimating their desire to withdraw from the Society, were recorded.

W. Murray, Esq., proposed at the last meeting was balloted for and elected an ordinary member.

The following gentlemen were named for ballot as ordinary members at the next meeting:—

Hon'ble Sumbhoo Nauth Pundit, Judge of the High Court, Calcutta, proposed by Mr. Cowell, seconded by the President.

Baboo Kaliprosunno Dutt, Pleader High Court, proposed by Baboo Rajendralal Mitra, seconded by Mr. Grote.

H. Leeds, Esq., Conservator of Forests in Burmah, proposed by Mr. Theobald, seconded by Mr. Grote.

A. M. Verchere, Esq., H. M.'s Indian Army, proposed by Capt. H. H. G. Austen, seconded by Capt. Lees.

Lieut. A. Pullan, Topographical Assistant G. T. Survey, Kashmir Series, proposed by Capt. H. H. G. Austen, seconded by Mr. Grote.

The Council reported that the following correspondence had passed between them and the Government of India, on the subject of the transfer of the Society's Museum to Government.

No. 173.

FROM THE SECRETARY TO THE ASIATIC SOCIETY OF BENGAL,—To
E. C. BAYLEY, Esq., SECY. GOVT. OF INDIA, HOME DEPT.

Asiatic Society's Rooms, Calcutta, 13th April, 1863.

SIR,—With reference to former correspondence on the subject of the proposed new museum, I am directed by the Council of the Asiatic Society to solicit the attention of Government to the plan sketched out in my letter dated 18th June, 1862, No. 180, as the basis of a definite arrangement for the transfer of the Society's museum.

As some years must probably elapse before a new museum building can be erected and fitted for the reception of the Society's collections, during which time the zoological portion of the collections will be liable to continued deterioration, if adequate provision be not made for their preservation, it appears highly desirable to the Society's Council that arrangements should be speedily completed for the permanent curatorship of the museum.

It is the more advisable that the consideration of this question be no longer deferred, as the Society's curator, Mr. Blyth, has now left India in such a state of health that there appears but little probability of his returning to resume his former duties, and the valuable services now voluntarily given by Dr. Jerdon to the superintendence of the zoological portion of the museum, are necessarily temporary, and not to be permanently relied on. It will, consequently, be necessary before long to consider the appointment of a permanent successor to Mr. Blyth, and it is obviously desirable that the whole question

of the future management of the museum should be decided before new engagements are entered into.

The Council are of opinion that it is by no means necessary to wait for the transfer of the collections to the new museum building in order to give effect to that portion of the proposed arrangement which relates to the internal management of the museum. With a proper staff of curators and assistants, the museum may be retained for some time to come in the present building, and with some increase of available funds, the present collections and such additions as may be expected in the interval, may be kept in a state of good preservation, and be made available for the purposes of science, even though they cannot be entirely displayed to casual visitors.

I am accordingly directed to solicit that the Government will take * No. 180, dated 18th June, 1862, into early consideration the propositions of the Council communicated in my former letter,* with a view to determining the conditions on which the proposed transfer of the Society's museum may be finally agreed to.

I have, &c.

(Sd.) W. S. ATKINSON,
Secy. Asiatic Society.

No. 5503.

From E. C. BAYLEY, Esq., Secy. to the Govt. of India, To W. S. ATKINSON, Esq., Secy. Asiatic Society of Bengal.

Dated Fort William, the 1st Sept., 1863.

Home Department.

SIR,—With reference to your letters of the 13th April last, and 18th June, 1862, I am desired to state that his Honor the President in Council is not unwilling to enter at once upon the consideration of the arrangements suggested in the last named letter, instead of postponing it until the Government may be in a position to erect a fitting building to contain a Government Museum.

2. But before doing so, the President in Council desires to offer some observations upon the rules suggested by the Council of the Society as the basis of a plan for the transfer of the Society's museum to Government, to be submitted for the approval of the Society at large.

3. The rules to which these observations apply, are the second, fifth, tenth and thirteenth.

4. The second defines the number and mode of election of the governing body of the proposed Government museum, and would, as it is now worded, leave the nomination of the Vice-President and of one-half of the Council with the Society. I am directed to point out, that as the museum will hereafter be wholly public and supported at the expense of the State, it seems to be inconsistent with its character to reserve so large a share in its management to a private Society. The President in Council is, therefore, of opinion that no more than one-third, instead of one-half, of the trustees should be named by the Asiatic Society.

5. For the same reasons, the President in Council dissents from the fifth rule, which would secure separate and distinct privileges to members of the Asiatic Society. When the museum has become the property of the public, the public ought to enjoy as free a use of its contents as is consistent with their due preservation. It by no means necessarily follows that the terms on which this use is granted to the public should be more limited than those on which the members of the Asiatic Society now enjoy the use of their own collection, or that the privileges of the members should be in any way restricted by the transfer.

6. Similarly, the President in Council would suggest that the reservation as to the library and manuscripts contained in the tenth and thirteenth Rules, should be omitted. It seems almost unavoidable that the proposed museum should possess the adjunct of at least a library of reference, such as the library of the Society would, with some additions, form; and there seems to be no good reason why two similar libraries should co-exist under the same roof. If the library and manuscripts were transferred with the other collections, it is not probable that the conditions attached to their use would be less liberal than those of the Asiatic Society, so that the members of that Society need not in any degree, as has been already said with respect to the other collections, suffer any abridgment of their privileges by the transfer.

I have, &c.

(Sd) E. C. BAYLEY,

Secy. to the Govt. of India.

No. 489.

From the Secretary to the Asiatic Society of Bengal,—To E. C. BAYLEY, ESQ., Secretary, Government of India, Home Department.

Asiatic Society's Rooms, Calcutta, 6th Nov., 1863.

SIR,—With reference to the previous correspondence noted in the margin, on the subject of the pro-

From the Govt. of India, Home Dept. No., 2564, dated 22nd May, 1862.

To the Govt. of India, in reply No. 180, dated 18th June, 1862.

To the Govt. of India, in continuation No. 173, dated 13th April, 1863.

From the Govt. of India, in reply No. 5503 dated 1st September, 1863.

posed transfer of the Society's museum to Government, I have the honor to submit to you the views held by the Council of the Society on those modifications of the Council's scheme proposed in your letter No. 5503 of the 1st September, 1863.

Previous to doing so, I am desired to assure you that the Council have received with much pleasure the announcement that his Honour the President in Council is not unwilling to enter at once upon the consideration of the proposed transfer, feeling that the interest thus manifested by Government in the progress of natural science cannot but have a most beneficial influence upon its cultivation in this country.

Under these circumstances, I am desired to state that the Council are prepared to modify, in accordance with his Honour's views, the rules proposed in their late Secretary's letter, (dated June 18th) so far as may not, in their opinion, seriously impair the well-being of the Society which they represent. Thus, while their original proposal, that one-half of the trustees of the new museum should be nominated by the Society, was suggested by the probable preponderance of the Society's collections for many years to come in the new museum, as well as by the fact that the Society has on many occasions acted as the scientific advisers of Government, the Council feel confident that the interests of Science will be so cared for by Government in the selection of its nominees, that they may without hesitation defer to his Honour's views on the proposed revision of their second Rule.

With similar feelings and on similar grounds, the Council concur in his Honour's suggestion that the fifth Rule proposed by them be so modified that the public at large be admitted to the same free use of the museum as that now enjoyed by the members of the Society. Both, they understand, would be only subject to such restrictions as may be necessary for the due preservation of the collections.

While, however, the Council are thus prepared to accede to his Honour's suggestions with regard to the management of the new museum, and to waive any claim of exclusive privilege for the members of the Society, they regret that the proposed modifications of Rules X. and XIII. are such as they cannot for a moment entertain. On this point there is entire unanimity on the part of the Council, and they feel sure that the same feeling pervades the Society at large. In fact, his Honour must on further consideration concur with them that the Society would, after such a transfer as that suggested, cease to exist. It would have no privileges to offer to its members, who would gradually leave an institution which had nothing but its traditions and its name to hold it together, and would in a few years have nothing but its house to yield it an income.

It appears, however, to the Council that the objects which the Government and the Society respectively have in view are not incompatible, and that the Society's library and the museum being under the same roof, while the library remains the property of the Society, it may equally be available to the curators or others working in the museum, as is at present the case; and thus that such funds as may be allotted by Government for the formation of a museum library may for some time to come be devoted to the purchase of such works as are not already possessed by the Society. I am, therefore, directed by the Council to propose the above modification of his Honour's suggestions, and to express their hope that this arrangement may be found to fulfil every desired end.

I have, &c.

(Sd.) H. F. BLANFORD,

Secy. Asiatic Society.

No. 7622.

From E. C. BAYLEY, Esq., Secy. to the Govt. of India, To H. F. BLANFORD, Esq., Secy. to the Asiatic Society of Bengal.

Dated Fort William, the 5th Dec., 1863.

Home Department.

SIR,—I am directed to acknowledge the receipt of your letter No. 489, dated the 6th ultimo, intimating that the Council of the Asiatic Society are prepared to accede to the suggestions offered to them with regard to the management of the new museum, and to waive any

claim of exclusive privilege for the members of the Society ; but that they cannot consent to transfer the Society's library to Government.

2. In reply I am directed to state that the Governor-General in Council has no wish to press upon the Society the proposed modifications of Rules X. and XIII., to which your letter expresses such strong objections, and that the alterations in Rules II. and V., which have been accepted by the Council, are considered by his Excellency in Council satisfactorily to have cleared the way to a definite conclusion of the negotiations pending between Government and the Society.

I have, &c.

(Sd.) E. C. BAYLEY,

Secy. to the Govt. of India.]

After the correspondence had been read by the Secretary, it was proposed by Dr. Oldham, seconded by Mr. Atkinson, and carried—

“That the present meeting desire to impress on the Society at large the propriety of authorising the Council of the Society to enter into definite and conclusive arrangements with the Government of India relative to the transfer of the Society's museum, in accordance with the terms of the correspondence now read.

“That the Council be requested to forward a copy of the whole correspondence to the members of the Society at large, and that the ordinary meeting in March be made special for the purpose of deciding this matter, in accordance with No. 43 of the Bye-laws.”

The Secretary read the following letter from Captain Ralph Ouseley to the address of the President, on some ancient localities in the Fyzabad district :—

“I am at work near the ruins of an old town named Uldemow. Tradition says it belonged to the “*Bhurs*,” and was destroyed many hundreds of years ago. I went a few days ago to see the ruins of what is supposed to have been a fort, and also the remains of an old temple. The town was situated on the banks of the Goomtee about twenty miles below Sultanpore, and opposite the fort ; there is a masonry dam below the water right across the river ;—the natives declare that it is neither more nor less than the roof of a tunnel which runs below the river bed. If I go there again I intend to make farther enquiries on this point. I ascertained in conversation with some of my native friends that coins are very often picked up

about the ruins, and I managed, through the influence of a very learned Pundit here resident, to obtain a few, and I am sending you by registered letter dāk to-day four; one silver modern one which does not belong to these parts, but which some one had by him. It is said to be a Bhootan coin, coined in the present King of Nepal's reign. The other three coins are copper—one, a Mahomedan one, bears the date 1021, supposed to be Hegira, and therefore about 260 years old. The other two neither Hindoos nor Mahomedans can read. The most learned pundits are at fault, but say that the characters are like Chinese, and so they appear to me. If these coins prove any addition to your collection, I will try and get some more."

The following extract from a letter from Baboo Rungolal Banerjea was also read:—

"I have also seen a copper-plate inscribed on both sides and bearing the record of a grant of land by Rajah Purusottama Deo of Orissa. It is now in the possession of an old man of eighty years, the Bhuñiya of *Goupadha*. He values it very highly, and cannot be prevailed upon to part with it. I have, however, managed to get a transcript, which I enclose. You will perceive from it that, though an Ooria document, it was executed in Bengal, a part of which was at one time held in sovereignty by the Kings of Orissa. The donor, Purusottama Deo of the Surajvansa dynasty, who, according to Stirling, reigned from 1478 to 1503, A. D., died in Bengal on the banks of the Bhagirutee, probably near Triveni, where the grant was made on the occasion of an eclipse. The record names the Ganges (*Gunga Garbha*) but, of course, it means the Hooghly, for you know that was the old bed of the Ganges; and what is now called by that name by Englishmen has no sanctity, and owes its present volume to a shifting of the ever-changing river. The date of the document is Monday, the 10th of *Baisakha* in the year 25 of the Rajah's reign, which will be equal to 1501, or a little before his death. The Rajah was a great patron of Chaitanya Deva, whose religion he adopted; and it was probably to visit the birth-place of that reformer that he came to Bengal; for there is no mention anywhere of his ever having entered the country as a conqueror, although Stirling gives a long account of his military successes in Conjeveram. His calling himself "Lord of Gauda" I take to be of no better import than the name of France in the BR. FR. *et* HIB. REX of the coins of Queen Anne and the first

two Georges. The *Nava Koti* (nine forts) alluded to in the record refers to some of the baronial castles of the Tributary Mehals, but I cannot ascertain which of them.

"The subject of the grant was the village of Purusottomapura, in the district of Balasore, close to Bastah. It was at the time of gift largely inhabited by Brahmins; hence the distinctive title of *Sāsana Bhumi*. The donee was a Brahmin of the name of Poteswara Bhatta, whose descendants still own it, though they are no longer Brahmins. During the supremacy of the Pathans two brothers quarrelled about their patrimony, and to secure the good graces of the Moslem Governor, one of them embraced the religion of the Koran, to which his descendants still adhere. The ladies of the family, however, notwithstanding their nominal allegiance to Mahomed, continue Brahminical in their habits and mode of life, and the household gods and the fire altar may still be seen in the family homestead. The plate, which is in a good state of preservation, is shaped like a *Kangura*, and has the deed of gift inscribed on one side, and the imprecatory verses on the other.

OBVERSE.

ଶ୍ରୀ ଜୟଦୁର୍ଗାୟେନମଃ । ବୀର ଶ୍ରୀଗଜପତି ଗୌତେଶ୍ବର ନବକୋଟି
କଶୀଚୌହାନ ବର୍ଗେଶ୍ବର ଶ୍ରୀପୁରୁଷୋତ୍ତମଦେବ ମହାରାଜାଙ୍କର ପୋତେଶ୍ବର
ଭଟ୍ଟଙ୍କୁ ଦାନ ଶାସନ ପଟା ୭୫ ଅଙ୍କ ମେଷର ୧୦ ଡ଼ ସୋମବାର ଗ୍ରହଣ-
କାଳେ ଗଙ୍ଗାଗର୍ଭେ ପୁରୁଷୋତ୍ତମପୁର ଶାସନଭୂମି ଯାବଜ୍ଜନ୍ତାଙ୍କେ ପୁତ୍ର ପୌତ୍ରାଦି
ପୁରୁଷାନୁକ୍ରମେ ଭୋଗ କରୁଥିବ ଜଳାରମ୍ଭ ନକ୍ଷେପ ସହିତ ଭୂମି ଦେଲୁ ॥

REVERSE.

ଯାବଜ୍ଜନ୍ତୁଷ୍ଠ ସୂର୍ଯ୍ୟଶ୍ଚ ଯାବଜ୍ଜନ୍ତୁମେଦନା ।
ଯାବଜ୍ଜନ୍ତାମୟାହୋଷାଲକ୍ଷ୍ୟ ଯୁକ୍ତାବସ୍ଥୁନିରା ॥
ସ୍ବଦତ୍ତାଂପରଦତ୍ତାଂ ବା ବ୍ରାହ୍ମକୃତ୍ତିଂ ହରୟେଃ ।
ଷଷ୍ଠିବର୍ଷସହସ୍ରାଲକ୍ଷ୍ଯାୟାଂ ଜାୟତେକୃମିଃ ॥
ଶ୍ରୀମଦନଗୋପାଳଃ ଶରଣଂ ମମଃ ॥

TRANSLATION OF THE INSCRIPTION.

"Salutation to the auspicious Jayadurga. This is a deed* of gift of the great hero, the fortunate Lord of Elephants (Gajapati) the

* The word *patta* is used in the text, but a *pottah* is never granted for rent-free land, and the word therefore must be taken here for simply a 'deed.'

Lord of Gauḍa, Navakoti, Karnāta, and Utkala, the auspicious Mahārāja Purusottama Deva to Poteswara Bhatta—

“On Monday, the 10th of Aries (*Baisākha*) in the year 25 *U** on the occasion of an eclipse, I, while in the bed of the river Ganges, do present to you the Brahmin-inhabited village of Purusottamapura with all its appurtenances, waters, gardens, and fields, that you and your heirs may enjoy the same as long as the sun and moon will last.

“As long as the sun and moon will run their course, and as long as the earth shall last, for even so long may the gift of mine of fruitful land last (with you). Whoever robs a Brahmin of his land, whether the same be his gift or that of others, shall be born a maggot in ordure for the period of 60,000 years. Sri Madanagopala Sarmana.† My marks, “figures of a conch, a dagger and a sword.”

Communications were received—

1. From the Assistant Secretary to the Government of Bengal, copy of a report from the Executive Engineer of the Tirhoot division, on the subject of the saline matter which pervades the surface soil of that district.

2. From Lieutenant-Colonel J. Abbott, a letter containing a description of the elephant statues recently exhumed at the Delhi palace.

3. From Dr. F. E. Hall, a letter containing a reply to the remarks made by Baboo Rajendralal Mitra on an article published by him in the Society's *Journal* for 1861 entitled, “The Inscription of Erikaine now Eran, re-deciphered and re-translated.”

4. From Baboo Gopinath Sen, abstract of the hourly meteorological observations taken at the Surveyor General's office in October last.

5. From Baboo Rajendralal Mitra, “On the ruins of Buddha Gya.”

The Baboo read the above paper, and the thanks of the meeting were voted to him on the motion of the President.

6. From the Military Secretary to his Excellency the Governor-General, a note on the *Didunculus Strigirostris* with photograph, being an extract from a New South Wales paper.

7. From the President, a note on a coin of the new Bactrian King Theophilos.

* The letter *U* evidently stands for Utkala, and the question is, was there ever an Utkala era?

† The word in the original is clearly *Saranam*, but I take it to be a misscript, for it is not at all likely that the donor should think of invoking the god Madanagopāla at the end of the document. The place is where the minister of Mohapatra should sign; and I take the name to be of such an officer

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY,
FOR
THE YEAR 1863.

STATEMENT
Abstract of the Cash Account

RECEIPTS.

	1863.		1862.
ADMISSION FEES.			
Received from New Members, Rs.	1,792 0 0		
	<u>1,792 0 0</u>	1,792 0 0	1,600 0 0
CONTRIBUTIONS.			
Received from Members, ...	7,138 2 9		
	<u>7,138 2 9</u>	7,138 2 9	7,222 9 0
JOURNAL.			
Sale proceeds of, and subscriptions to the Journal of the Asiatic Society, ...	605 1 0		
Refund of Postage Stamps, ...	5 14 0		
Discount on ditto, ...	0 6 3		
	<u>611 5 3</u>	611 5 3	537 3 0
LIBRARY.			
Sale proceeds of Books, ...	365 12 0		
Refund of Freight, ...	23 0 0		
	<u>388 12 0</u>	388 12 0	521 0 0
MUSEUM.			
Received from the General Treasury, ...	6,000 0 0		
Savings of Salary, ...	31 12 6		
	<u>6,031 12 6</u>	6,031 12 6	5,211 2 3
SECRETARY'S OFFICE.			
Sale of Postage Stamps, ...	6 12 0		
Discount on ditto, ...	1 12 9		
Fine, ...	0 8 0		
Refund of Postage, ...	1 11 0		
	<u>10 11 9</u>	10 11 9	6 3 0
VESTED FUND.			
Sale proceeds of Government Securities, ...	5,000 0 0		
Interest on ditto, ...	134 1 8		
Premium on the sale of ditto, ...	360 0 0		
	<u>5,494 1 8</u>	5,494 1 8	245 0 0
MESSRS. WILLIAMS AND NORRIS.			
Received from them, as per order in favor of Mr. E. Blyth on account of his salary, as per their letter, dated 9th July, 1863, ...	900 0 0		
Ditto ditto as per ditto, dated 26th Sept. 1863, ...	325 0 0		
	<u>1,225 0 0</u>	1,225 0 0	
Carried over,...	22,691 13 11		

No. 1.

of the Asiatic Society, for 1863.

DISBURSEMENTS.

	1863.	1862.
JOURNAL.		
Printing Charges, including paper,	3,072 11 0	
Freight,...	152 4 0	
Purchasing Postage Stamps, ...	55 3 6	
Packing Charges, ...	25 8 0	
Charges for preparing Litho- graphs, ...	173 0 0	
Charges for Engraving and Print- ing of Plates, ...	83 8 0	
A Blank Record Book, ...	3 8 0	
Commission on the Sale of Books,	13 3 10	
Purchase of a Copy of Journal, No. III. of 1862, ...	2 0 0	
Preparing a Photograph, ...	15 0 0	
Petty Charges, ...	1 1 0	
	<hr/>	
	3,596 15 4	3,128 15 0

LIBRARY.

Salary of the Librarian, ...	770 0 0	
Establishment, ...	84 0 0	
Purchase of Books, ...	312 0 0	
Book-Binding, ...	262 12 0	
Books Cleaning, ...	42 0 0	
Commission on Sale of Books, ...	39 8 11	
Printing Charges, ...	31 0 0	
Paid for a Teakwood Book Case,...	246 0 0	
Banghy Expenses, ...	1 8 0	
Landing Charges, ...	5 8 0	
Purchased 44 Stone Bottoms for the Book Cases, ...	22 0 0	
Paid Ticket writer for Labelling Photographic Album Books, ...	27 5 4	
Petty Charges, ...	14 4 3	
	<hr/>	
	1,857 14 6	2,698 1 3

MUSEUM.

Salary of the Curator, E. Blyth, Esq. at Rs 250 per month, for 12 months, from Dec. 1862 to Nov. 1863, ...	3,000 0 0	
His House-rent for half month, in Dec 1862, ...	40 0 0	
Paid Income Tax on Mr. Blyth's Salary, ...	107 8 0	

Carried over,... ... 5,454 13 10

RECEIPTS.

Brought over,...Rs. 22,691 13 11

DEPOSIT.

Lt. J. Johnstone, ...	...	18	0	0				
Capt. J. P. Basevi, ...	...	18	0	0				
E. G. Glazier, Esq.,...	...	18	0	0				
Quazee Abdool Quodoos,	...	5	10	0				
V. Irwin, Esq., ...	...	18	0	0				
Dr. Bhau Dajee, ...	...	42	0	0				
Babu Nobin Chunder Roy,	...	4	11	0				
Major J. T. Walker,	...	24	0	0				
F. Fedden, Esq., ...	...	22	0	0				
R. A. Sterndale, Esq.,	...	12	0	0				
A. E. Russell, Esq.,...	...	4	0	0				
J. Stephenson, Esq.,	...	36	0	0				
Lt.-Col. A. Phayre, ...	...	88	0	0				
Babu Brojendra Gopal Pal Chow-								
dry, ...	...	2	3	0				
E. Blyth, Esq., ...	...	675	0	0				
W. T. Dodsworth, Esq.,	...	6	0	0				
T. H. Thornton, Esq.,	...	16	0	0				
C. Campbell, Esq., ...	...	6	0	0				
T. B. Lane, Esq., ...	...	36	0	0				
Baboo Munphool Pundit,	...	8	0	0				
Capt. Raverty, ...	...	7	4	0				
Capt. F. B. Norman,...	...	4	0	0				
Major J. J. M. Innes,	...	12	0	0				
					1,082	12	0	221 8 6

MISCELLANEOUS.

Refund of the amount paid to Mr.

A. M. Cameron through Major

J. T. Walker, ...

50 0 0

50 0 0

BALANCE OF 1862,

Bank of Bengal, 757 8 9

Cash in hand, 78 5 6

835 14 3

Inefficient Balance, ... 1,277 3 6 2,113 1 9

Carried over, 25,937 11 8

DISBURSEMENTS.

		Brought over,...Rs. 5,454 13 10			
Paid Mr. E. Blyth on account of preparing Mammalia Catalogue,	250	0	0		
Printing 124 pages, of 200 copies of Catalogue of Mammalia, ...	254	0	0		
Salary of the Sub-Curator, at Rs. 100 per month, for 11 months,	1,100	0	0		
Establishment, ...	838	8	0		
Extra Taxidermists' Salary, ...	833	6	9		
Paid Passage-money for a Taxidermist to Burmah, ...	50	0	0		
Contingent Charges,...	645	15	8		
Lithographing and printing Charges including paper, ...	80	8	0		
Charges for Labelling Tickets of Fossil Shells, ...	19	0	0		
Matting the Bird Rooms with Zinc Sheets, ...	98	5	6		
Repair of old Mats, ...	6	0	0		
Freight, ...	78	12	0		
Purchase of Skeletons, ...	209	0	0		
A Teakwood Case for keeping Birds' Eggs, ...	50	0	0		
Two ditto Quadrumana Cases, at 300 Rs. ...	600	0	0		
A ditto working Cabinet, ...	50	0	0		
A ditto Meteorite Case, ...	135	12	0		
Purchased 32 Stone Bottoms for the Quadrumana Cases, ...	16	0	0		
A Blank Book, ...	6	8	0		
				8,169	3 11 6,192 0 0

SECRETARY'S OFFICE.

General Establishment, ...	776	8	0		
Secretary's Office Establishment, ...	858	0	0		
Purchase of Postage Stamps, ...	92	0	6		
A Sheet Almanac for 1863, ...	1	8	0		
Printing Charges, ...	171	8	0		
Lithographing Charges, ...	6	0	0		
Two Blank Books, ...	16	4	0		
Stationery, ...	109	7	6		
Postage, ...	4	15	3		
Petty Charges, ...	10	14	3		
				2,047	1 6 1,979 3 3

VESTED FUND.

Paid Commission upon Interest on the Government Securities, ...	12	12	11		
Ditto Income Tax on ditto, ...	0	7	5		
Ditto discount on the sale proceeds of Govt. Securities, ...	0	10	0		
Ditto fee for renewing Government Securities, ...	2	0	0		
				15	14 4 5 6 2

Carried over,... 15,987 1 7

RECEIPTS.

Brought over, ...Rs. 25,937 11 8

Carried over, 25,937 11 8

DISBURSEMENTS.

Brought over,...Rs. 15,987 1 7

MESSRS. WILLIAMS AND NORGATE.

Paid their draft in favor of the				
Bank of Bengal, on account				
current,	2,000	0	0	
Purchase of 3 Copies of Mr.				
Laing's Lectures for them, ...	3	0	0	
				2,003 0 0

DEPOSIT.

Quazee Abdool Quodoos, ...	5	10	0	
Major J. T. Walker, ...	24	0	0	
Narranje Tricumjee, Esq., ...	1	14	0	
Lieut.-Col. A. Phayre, ...	36	0	0	
F. Fedden, Esq., ...	22	0	0	
W. T. Dodsworth, Esq., ...	18	0	0	
E. Blyth, Esq., ...	675	0	0	
Lieut.-Col. J. Abbott, ...	7	7	0	
Lieut. J. Johnstone, ...	18	0	0	
E. G. Glazier, Esq., ...	18	0	0	
V. Irwin, Esq., ...	18	0	0	
Major J. J. M. Innes, ...	12	0	0	
R. A. Sterndale Esq., ...	12	0	0	
J. Stephenson Esq., ...	24	0	0	
T. H. Thornton, Esq., ...	6	0	0	
T. B. Lane, Esq., ...	12	0	0	
Dr. Bhau Dajee, ...	18	0	0	
Capt. Raverty, ...	7	4	0	
Capt. J. P. Basevi, ...	18	0	0	
C. Campbell, Esq., ...	6	0	0	
				959 3 0 657 0 0

COIN FUND.

Paid Banghy Charges, ...	3	12	0	
Ditto Petty Charges, ...	2	10	6	
				6 6 6 572 13 6

BUILDING.

Assessment, ...	292	8	0	
Ditto for Lighting, ...	72	0	0	
Repairs of the Premises, ...	61	4	3	
				425 12 3 380 0 0

MISCELLANEOUS.

Advertising Charges, ...	9	12	0	
Meeting Charges, ...	168	9	6	
Wages of a Ticca Mally, ...	57	0	0	
Purchasing Receipt Stamps, ...	5	0	0	
A Clock Winder, ...	5	0	0	
Repair of a Carpet, ...	10	0	0	
Copying Charges of Arthava veda				
Brahmana for the American				
Oriental Society. ...	13	7	9	
Repair of Old Mats, ...	2	8	0	
				Carried over,... 19,381 7 4

RECEIPTS.

Brought over, ... 25,937 11 8

Co.'s Rupees,... 25,937 11 8

Examined.

LALGOPAL DUTT,
*Assistant Secretary.**Asiatic Society's Rooms,*
The 31st December, 1863.

DISBURSEMENTS.

		Brought over,...Rs.		19,381	7	4
Paid Mr. A. M. Cameron as per						
Council order, dated 26th June,						
1863, ...	...	50	0	0		
Ditto fee to the Bank of Bengal,						
for Stamping Cheques, ...	...	1	9	0		
Petty Charges, ...	...	28	0	9		
		<hr/>			350	15 0
					302	5 9

BALANCE.

Bank of Bengal,									
On account Vested									
Fund, ...	5,360	0	0						
Do. Current Fund, 249	13	1	5,609	13	1				
Cash in hand, ...	...		104	6	3				
Inefficient Balance, ...	...		491	2	0	6,205	5	4	
			Co.'s Rs.	25,937	11	8			

W. L. HEKLEY,
Secretary, As. Society.

STATEMENT
Abstract of the Oriental

RECEIPTS.

	1863.		1862.
ORIENTAL PUBLICATIONS.			
Received by Sale of Bibliotheca Indica, ...	Rs. 1,610 15 0		
Ditto by Subscription to ditto, ...	158 2 0		
Ditto by Sale of White Yajur Veda, ...	151 10 0		
Refund of Postage Stamps, ...	7 6 0		
	<u>1,928 1 0</u>		1,193 9 0
GOVERNMENT ALLOWANCE.			
Received from the General Treasury at 500 Rs. per month, 12 months, ...	6,000 0 0		
	<u>6,000 0 0</u>		6,000 0 0
VESTED FUND.			
Received by Sale of Government Securities, ...	9,500 0 0		
Ditto Interest on ditto ditto, ...	262 1 9		
Ditto Premium on ditto ditto, ...	540 0 0		
	<u>10,302 1 9</u>		440 0 0
CUSTODY OF ORIENTAL WORKS.			
Savings and Establishment, ...	2 8 0		
	<u>2 8 0</u>		17 0 9
DEPOSIT.			
Rao Saheb Vishwanath Narayan Mandlick, ...	25 0 0		
Pundit Gopeenath Nagar, ...	15 0 0		
	<u>40 0 0</u>		
BALANCE OF 1862.			
Bank of Bengal, ...	537 4 2		
Cash in hand, ...	2 8 8		
	<u>539 12 10</u>		
Inefficient Balance, ...	1,614 8 6		
	<u>2,154 5 4</u>		

Carried over,... 20,427 0 1

No. 2.

Fund for 1863.

DISBURSEMENTS.

	1863.	1862.
ORIENTAL PUBLICATIONS.		
Commission on Sale of Books, Rs.	138 2 3	
Freight,...	108 12 0	
Packing Charges, ...	24 9 0	
Purchase of Postage Stamps, ...	14 0 0	
A Blank Book, ...	4 0 0	
Printing and Lithographing 500		
Subn. Bills for the Bibliotheca		
Indica, ...	5 8 0	
Petty Charges, ...	12 5 3	
	<hr/>	
	307 4 6	220 15 9
VESTED FUND.		
Commission upon Interest on Go-		
vernment Securities, ...	0 8 10	
Ditto on Sale of Government Secu-		
rities,...	23 12 0	
Discount on ditto ditto, ...	4 6 2	
Paid Fee for renewing a Govern-		
ment Security, ...	1 0 0	
Ditto Income Tax upon Interest		
on Government Securities, ...	1 10 10	
	<hr/>	
	31 5 10	9 13 9
CUSTODY OF ORIENTAL WORKS.		
Salary of Librarian, ...	330 0 0	
Establishment, ...	96 0 0	
Book-Binding, ...	212 0 0	
Books Cleaning, ...	66 10 0	
Banghy Expenses, ...	9 12 0	
Salary of a Ticca Duftory, ...	49 5 3	
Stamp-fee paid to the Bank of		
Bengal, ...	1 9 0	
Two Blank Books, ...	7 12 0	
52 Stone Bottoms for Book Cases,	26 0 0	
Petty Charges, ...	1 13 0	
	<hr/>	
	800 13 3	773 1 0
DEPOSIT.		
Pundit Gopeenath Nagar, ...	15 0 0	
	<hr/>	
	15 0 0	41 13 0
LIBRARY.		
Purchase of Books, ...	98 6 0	
	<hr/>	
	98 6 0	114 9 9
COPYING MSS.		
Copying Charges, ...	44 5 0	
	<hr/>	
	44 5 0	
VEDANTA SUTRAS.		
Editing Charges, ...	564 0 0	
Printing ditto, ...	1,770 2 0	
	<hr/>	
	2,334 2 0	675 4 0
<hr/>		
Carried over,...	3,631 4 7	

RECEIPTS.

Brought over,...Rs. 20,427 0 1

Co.'s Rs.,...	20,427	0	1
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Examined.

LALGOPAL DUTT,
Assistant Secretary.

*Asiatic Society's Rooms,
 The 31st December, 1863.*

DISBURSEMENTS.

Brought over,...Rs. 3,631 4 7

KA'VYA'DARS'A.

Editing Charges, ...	...	460	0	0			
Printing ditto, ...	...	1,084	0	0			
					1,544	0	0

SANKHYA APHORISMS OF KAPILA (Translation.)

Printing Charges, ...	...	242	0	0			
					242	0	0

SANKHYA OF THE BLACK YAJUR VEDA.

Editing Charges, ...	...	60	0	0			
Printing Charges, ...	...	448	0	0			
					508	0	0
						224	0

TAITTIRI'YA BRA'HMANA.

Editing Charges, ...	...	1,989	0	0			
Printing ditto, ...	...	916	0	0			
					2,905	0	0

MAITRI UPANISHAD.

Editing Charges, ...	...	120	0	0			
Printing ditto, ...	...	448	0	0			
					568	0	0

SU'RYA SIDDHA'NTA.

Compiling 21 pages of the Index to ditto, ...	...	32	0	0			
					32	0	0

NA'RAMA PANCH RA'TRA.

Charges for assistance in editing									
ditto, ...	...	35	0	0					
					35	0	0	542	12
								0	

TABAKTA'I NASIRI.

Editing and Printing Charges, ...	...	584	0	0			
					584	0	0

KA'MANDAKI.

Printing Charges, ...	...	129	10	0			
					129	10	0
						140	0

LALITA VISTARA.

Printing Charges, ...	...	233	8	0			
					233	8	0

PRA'KRITA VYA'KARANA.

Printing Charges, ...	...	442	4	0			
					442	4	0

SIDDHA'NTA SIROMANI.

Printing Charges for the Index,...	54	12	0			
				54	12	0
					214	8
						0

BALANCE.

In the Bank of Bengal, 9,451 4 1							
Cash in hand, ...	...	4	13	11			
					9,456	2	0
Inefficient Balance, ...	...	61	7	6			
					9,517	9	6

Co.'s Rs.... 20,427 0 1

W. L. HEELRY,
Secretary, As. Society.

STATEMENT, No. 3.

Shewing the Assets and Liabilities of the Asiatic Society at the close of 1863.

CASH.		1863.	1862.
Bank of Bengal, on account sale proceeds of Govt. Securities,	5,360 0 0		
on current account,	249 13 1	5,609 13 1	757 8 9
Cash in hand,		104 6 3	78 5 6
Inefficient Balance,		491 2 0	1,277 3 6
Government Securities,		0 0 0	5,000 0 0
		<u>Rs. 6,205 5 4</u>	<u>7,113 1 9</u>
OUTSTANDINGS.			
Contributions,		Rs. 5,250 1 11	4,156 10 8
Admission Fees,		320 0 0	224 0 0
Library Sale of Books,		373 0 0	291 8 0
Journal Subscription,		526 4 8	483 12 3
Ditto Sale of,		39 14 3	63 12 3
Government Allowance for Dec., 1863,		500 0 0	500 0 0
		<u>Rs. 7,009 4 10</u>	<u>5,719 11 2</u>
Examined.			
LALGOPAL DUTT,			
Assistant Secretary.			
ASIANIC SOCIETY'S ROOMS,			
The 31st Dec., 1863.			
W. L. HEELEY,			
Secretary, As. Society.			
		1863.	1862.
Hon'ble Sir J. W. Colvile, Kt.,..... Rs.		276 8 0	276 8 0
J. W. Laidlay, Esq.		418 7 4	418 7 4
Sundry deposits,		177 11 6	54 2 6
Messrs. Williams and Norgate, about...		275 0 0	607 2 4
Salary, Establishment and Contingent Charges for December, 1863,		500 0 0	600 0 0
Printing Journal, III. and IV. of 1863, about,		650 0 0	1,710 8 0
Subscription to the Oriental Translation Fund, £42,		420 0 0	315 0 0
Bird Catalogue Binding,		42 4 0	42 4 0
		<u>Rs. 2,759 14 10</u>	<u>4,024 0 2</u>

LIST OF MEMBERS.

ON THE 31ST DEC. 1863.

LIST OF ORDINARY MEMBERS.

The * distinguishes Non-Subscribing and the † Non-Resident Members.

Date of Election.		
1847 June	2.	†Abbott, Lieut.-Col. J., Artillery.
1860 Dec.	5.	Abdool Luteef, Khan Bahadur, Maulavi.
1860 July	4.	†Ahmed, Saiëd, Khan Bahadur.
1862 April	2.	Aitchison, C. U. Esq., C. S.
1862 April	4.	†Aitchison, J. E. T. Esq., M. D.
1859 Feb.	2.	*Alabaster, C. Esq.
1852 July	7.	*Allen, C. Esq., B. C. S.
1860 Oct.	3.	Amir Ali, Khan, Múnshí.
1843 Sept.	4.	*Anderson, Lieut.-Col. W., Bengal Artillery.
1861 May	1.	Anderson, T. Esq. M. D., F. L. S., Royal Bot. Garden.
1860 Nov.	7.	†Anley, W. A. D. Esq.
1862 Oct.	8.	Apurva Krishna, Rajah Bahadur.
1859 Oct.	12.	Archer, Dr.
1861 Sept.	4.	Asghur Ali, Khan Bahadur, Nawab.
1861 July	3.	*Asphar, J. J. T. H. Esq.
1860 Mar.	7.	Atkinson, Lieut.-Col. F. D.
1855 July	4.	Atkinson, W. S. Esq., M. A., F. L. S.
1861 Feb.	6.	†Austen, Capt. H. H. G., H. M.'s 24 Foot, Surv. Genl.'s Dept.
1826 Sept.	6.	Avdall, J. Esq.
1835 Oct.	7.	*Baker, Col. W. E., Bengal Engineers.
1860 Nov.	7.	Banerjea, Rev. K. M.
1861 Mar.	6.	†Barnes, C. H. Esq.
1862 Aug.	6.	*Basevi, Capt. J. P., Bengal Engineers.
1860 July	4.	†Batten, G. H. M. Esq., B. C. S.
1838 Jan.	3.	†Batten, J. H. Esq., B. C. S.
1859 May	4.	Bayley, E. C. Esq., B. C. S.
		Umballa.
		Calcutta.
		Ghazipore.
		Calcutta.
		Lahore.
		China.
		Europe.
		Calcutta.
		Europe.
		Calcutta.
		Allahabad.
		Calcutta.
		Calcutta.
		Calcutta.
		Calcutta.
		Europe.
		Calcutta.
		Calcutta.
		Dehra Dhoon.
		Calcutta.
		Europe.
		Calcutta.
		Bhagulpore.
		Europe.
		Allahabad.
		Agra.
		Calcutta.

Date of Election.			
1861 Feb.	6.	Bayley, S. C. Esq., B. C. S.	Calcutta.
1849 June	6.	Beadon, Hon'ble C., B. C. S.	Calcutta.
1841 April	7.	Beaufort, F. L. Esq., B. C. S.	Calcutta.
1861 Sept.	4.	*Beavan, Lieut. R. C., late 62nd B. N. I.	Europe.
1847 Aug.	4.	*Beckwith, J. Esq.	Europe.
1830 Sept.	1.	*Benson, Lieut.-Col. R.	Europe.
1862 Dec.	3.	†Bernard, C. E. Esq.	Nagpore.
1862 Aug.	6.	†Beverley, H. Esq., C. S.	Darjiling.
1862 June	4.	†Bhau Daji, Dr.	Bombay.
1862 July	2.	Bhola Nath Mullick, Bábu.	Calcutta.
1840 July	15.	*Birch, Major-General Sir R. J. H. K. C. B.	Europe.
1846 Mar.	4.	*Blagrove, Major T. C., 26th Regt., B. N. I.	Europe.
1859 Sept.	7.	Blane, Lieut.-Col. S. J.	Calcutta.
1857 Mar.	4.	Blanford, H. F. Esq., A. R. S. M., F. G. S.	Calcutta.
1859 Aug.	3.	†Blanford, W. T. Esq., A. R. S. M., F. G. S. Geol. Survey.	Bombay.
1857 Aug.	2.	*Bogle, Lieut.-Col. Sir A., Kt.	Europe.
1859 Aug.	3.	Bolie Chand Sing, Bábu.	Calcutta.
1861 Mar.	6.	Boulnois, C. Esq., B. A.	Calcutta.
1859 Oct.	12.	†Bowring, L. B. Esq., B. C. S.	Mysore.
1854 Nov.	1.	*Boycott, Dr. T., B. M. S.	Europe.
1860 Mar.	7.	†Brandis, Dr. D.	Rangoon.
1860 Oct.	3.	*Brandreth, J. E. L. Esq.	Europe.
1862 Jan.	15.	†Briggs, Major D.	Assam.
1847 June	2.	*Brodie, Capt. T., 5th Regt., B. N. I.	Europe.
1860 Nov.	7.	†Browne, Capt. Horace A.	Rangoon.
1860 Mar.	7.	Browne, Rev. J. Cave, M. A.	Calcutta.
1863 Aug.	5.	†Bunkim Chunder Chatterjea, B. A.	Khoolneah.
1860 July	4.	†Bunsput Sinha, Rajah.	Allahabad.
1856 Sept.	3.	Busheerooddin, Sultan Mohammad.	Chinsurah.
1860 July	4.	†Byrne, L. F. Esq., C. E.	Lahore.
1859 April	6.	Calcutta, Right Rev. Lord Bishop of.	Calcutta.
1860 June	6.	†Campbell, C. J. Esq., C. E.	Delhi.
1859 Sept.	7.	*Campbell, Dr. A.	Europe.
1863 June	3.	Campbell, Hon'ble G.	Calcutta.
1860 Jan.	4.	†Carnac, J. H. Rivett, Esq., B. C. S.	Nagpore.
1856 Sept.	3.	Chapman, R. B. Esq., B. C. S.	Calcutta.
1860 Oct.	3.	†Christian, J. Esq.	Monghyr.
1863 Aug.	5.	†Chunder Nath Roy, Cowar.	Nattore.
1863 June	3.	†Chunder Sekur Roy, Rajah.	Julpigori.
1863 April	1.	†Cleghorn, Dr. H., Conservator of For- ests.	Lahore.
1863 June	3.	†Clementson, E. W. Esq.	Moulmein.
1861 Sept.	4.	†Cockburn, J. F. Esq., C. E.	Kurhurbari Colliery.
1862 April	2.	†Colles, J. A. P. Esq., M. D.	Peshawur.

Date of Election.		
1851 Mar.	5. *Colvin, J. H. B. Esq., B. C. S.	Europe.
1860 Dec.	5. †Cooper, F. H. Esq., B. C. S.	Delhi.
1857 Mar.	4. Cowell, E. B. Esq., M. A.	Calcutta.
1861 July	3. *Crockett, Oliver R. Esq.	China.
1862 April	2. †Dalrymple, F. A. E. Esq., C. S.	Chittagong.
1847 June	2. †Dalton, Lieut.-Col. E. T., 9th Regt. B. N. I.	Chota Nag- pore.
1861 Mar.	6. †Davey, N. T. Esq., Revenue Survey.	Sylhet.
1861 Sept.	4. Davidson, Capt. E., Bengal Engineers.	Calcutta.
1861 Nov.	6. *Davies, R. H. Esq., B. C. S.	Europe.
1856 June	4. †DeBourbel, Major R., Bengal Engrs.	Allahabad.
1861 June	5. Denison, His Excellency Sir W., K. C. B.	Calcutta.
1863 Feb.	4. †Deo Narain Sing, The Hon'ble Rajah.	Benares.
1863 June	3. †Depree, Capt. G. C., Royal Artillery.	Chota Nag- pore.
1861 Mar.	6. *Devereux, Hon'ble H. B., B. C. S.	Europe.
1862 May	7. †Dhunpati Sinha Dooghur, Bábu.	Moorsshedabad.
1853 Sept.	7. Dickens, Lieut.-Col. C. H.	Calcutta.
1863 Oct.	7. Dickens, Major A. D.	Calcutta.
1863 Dec.	2. Dickens, T. Esq.	Calcutta.
1860 Nov.	7. Digumber Mitra, Bábu.	Calcutta.
1861 Jan.	9. †Dodsworth, W. T. Esq.	Meerut.
1859 Sept.	7. Douglas, Lieut.-Col. C.	Calcutta.
1854 July	5. †Drummond, Hon'ble E., B. C. S.	Allahabad.
1863 Nov.	4. Duff, W. P. Esq.	Calcutta.
1861 Feb.	6. †Duhan, H. Esq., G. T. Survey.	Dehra Dhoon.
1860 Jan.	4. *Duka, Dr. T.	Europe.
1861 May	1. †Earle, Capt. E. L., Bengal Artillery.	Kurnal.
1857 May	6. *Eatwell, Dr. W. C. B.	Europe.
1840 Oct.	7. *Edgeworth, M. P. Esq., B. C. S.	Europe.
1863 Mar.	4. †Eden, Hon'ble A.	Bhootan.
1863 May	6. †Edgar, W. Esq., B. C. S.	Dacca.
1859 May	4. *Edmonstone, Hon'ble G. F., B. C. S.	Europe.
1846 Jan.	7. *Elliott, Hon'ble Walter, M. C. S.	Europe.
1859 Nov.	2. †Elliott, C. A. Esq., B. C. S.	Hoshungabad.
1863 April	1. Ellis, Hon'ble R. S., C. B. C. S.,	Calcutta.
1856 Mar.	5. *Ellis, Lieut.-Col. R. R. W., 23rd Regt. B. N. I.	Europe.
1854 Nov.	1. †Elphinstone, Capt. N. W., 4th Regt. B. N. I.	Jullundur.
1861 Jan.	9. †Erskine, Hon'ble C. J., B. C. S.	Bombay.
1856 Aug.	6. *Erskine, Major W. C., C. B.	Europe.
1863 Oct.	7. Ewart, Dr. J.	Calcutta.
1862 Aug.	6. *Eyre, Col. Vincent, C. B.	Europe.
1851 May	7. Fayrer, Dr. J., B. M. S.	Calcutta.

Date of Election.			
1863 Jan.	15.	†Fedden, Francis, Esq., Geol. Survey.	Bassein.
1859 Oct.	12.	Fisher, A. Esq.	Calcutta.
1860 Mar.	7.	Fitzwilliam, Hon'ble W. S.	Calcutta.
1861 Feb.	6.	†Forrest, R. Esq., Civil Engineer.	Dehra Dhoon.
1863 Dec.	2.	†Forsyth, J. Esq.	Seonee.
1863 June	3.	†Forsyth, T. D. Esq., C. B.	Lahore.
1860 Jan.	4.	†Fraser, Capt. A.	Alguada, Reef.
1860 Mar.	7.	†Frere, His Excellency Sir H. Bartle, K. C. B., B. C. S.	Bombay.
1861 Sept.	4.	†Fuller, Capt. A. R.	Lahore.
1859 Oct.	12.	†Furlong, Capt. J. G. R.	Agra.
1859 Dec.	7.	Futteh Ali, Maulavi.	Calcutta.
1849 Sept.	5.	†Fytche, Lieut.-Col. A., 70th Regt. B. N. I.	Maulmein.
1859 Sept.	7.	†Gardener, D. M. Esq., B. C. S.	Meerut.
1859 Aug.	3.	Gastrell, Lieut.-Col. J. E., 13th Regt. N. I., Rev. Survey.	Calcutta.
1859 Sept.	7.	Geoghegan, J. Esq., B. C. S.	Calcutta.
1842 Sept.	2.	*Gladstone, W. Esq.	Europe.
1862 April	2.	†Glazier, E. G. Esq., C. S.	Backergunge.
1859 Sept.	7.	Goodeve, E. Esq., M. D.	Calcutta.
1862 July	2.	*Gordon, J. D. Esq., C. S.	Europe.
1860 Sept.	5.	†Goss, W. Forbes, Esq.	Sumbulpore.
1862 Feb.	5.	†Gourdoss Bysack, Bábu.	Khoolneah.
1840 Sept.	6.	Govin Chunder Sen, Bábu.	Calcutta.
1863 Nov.	4.	†Gowan, Major J. G.	Saugur.
1860 July	4.	Grant, J. P. Esq. Jr., B. C. S.	Calcutta.
1859 Dec.	7.	*Grant, Sir J. P., K. C. B.	Europe.
1860 Jan.	4.	Grant, T. R. Esq.,	Calcutta.
1860 July	4.	Grey, Hon'ble W., B. C. S.	Calcutta.
1861 Sept.	4.	†Griffin, L. Esq., B. C. S.	Guzerat.
1860 Nov.	7.	†Griffith, R. T. H. Esq.	Benares.
1849 Aug.	1.	Grote, A. Esq., B. C. S., F. L. S.	Calcutta.
1861 Feb.	6.	*Growse, F. S. Esq., B. C. S.	Europe.
1860 Dec.	5.	†Guru Churn Doss, Bábu.	Berhampore.
1862 Feb.	5.	Guthrie, Col. C. S., Bengal Engineers.	Calcutta.
1847 June	2.	*Hall, F. E. Esq., M. A., D. C. L.	Europe.
1860 May	2.	*Halleur, Dr. H.	Europe.
1863 June	3.	†Hamilton, Col. G. W.	Delhi.
1855 Mar.	7.	*Hamilton, R. Esq.	China.
1828 Nov.	12.	*Hamilton, Sir R. N. E., Bart., B. C. S.	Europe.
1847 May	5.	*Hannynghton, Col. J. C., 63rd Regt. N. I.	Europe.
1859 Oct.	12.	*Hardie, Dr. G. K.	Europe.
1863 Mar.	4.	Hari Doss Dutt, Bábu.	Calcutta.
1862 Oct.	8.	Harington, Hon'ble H. B.	Calcutta.

Date of Election.			
1860 Oct.	3.	†Harris, E. B. Esq., Civil Surgeon.	Monghyr.
1861 Feb.	6.	†Harrison, A. S. Esq., B. A.	Behar.
1859 Oct.	12.	†Haughton, Lieut.-Col. J. C.	Assam.
1848 May	3.	*Hearsay, Major-Genl. Sir J. B., K. C. B.	Europe.
1862 Aug.	6.	Heeley, W. L. Esq., B. C. S.	Calcutta.
1859 Aug.	3.	*Henessey, J. B. N. Esq.	Europe.
1853 July	6.	†Herschel, W. J. Esq., B. C. S.	Purneah.
1854 Mar.	1.	*Hichens, Lieut. W., Bengal Engineers.	Europe.
1860 May	2.	Hobhouse, C. P. Esq., B. C. S.	Calcutta.
1862 Oct.	8.	Hogg, C. S. Esq.	Calcutta.
1859 Sept.	7.	*Hopkinson, Major H.	Europe.
1863 July	1.	†Horne, C. Esq., C. S.	Benares.
1860 Mar.	7.	†Hovenden, Major J. J., Bengal Engrs.	Allahabad.
1863 Jan.	15.	†Howell, M. S. Esq., C. S.	Bareilly, Ro-
		[Engineers.	hilkund.
1862 July	2.	Hyde, Lieut.-Col. H., Royal Bengal	Calcutta.
1860 Jan.	4.	†Innes, Major J. J. M.	Lahore.
1862 Oct.	8.	†Irwin, Valentine, Esq., C. S.	Dinajpore.
1853 Dec.	7.	†Ishureeprasad Sinha, Bahadur, Rajah.	Benares.
1861 Jan.	9.	Jackson Hon'ble L. S., B. C. S.	Calcutta.
1841 April	7.	*Jackson, W. B. Esq., B. C. S.	Europe.
1851 April	2.	Jádava Krishna Sinha, Bábu.	Calcutta.
1860 Jan.	4.	Jalláluddin Mohammad, Prince.	Calcutta.
1861 Dec.	4.	†James, Major H. R., C. B.	Peshawur.
1845 Dec.	3.	†Jerdon, T. C. Esq., M. M. S.	Umballa.
1862 July,	2.	Johnson, Major A. B., Bengal Staff	
		Corps.	Calcutta.
1847 June	2.	*Johnstone, J. Esq.	Europe.
1862 Mar.	5.	†Johnstone, Lieut. J., Assistant Com-	
		missioner.	Bunnoo.
1859 Sept.	7.	*Jones, R. Esq.	Europe.
1857 April	1.	Joygopal Bysack, Bábu.	Calcutta.
1853 May	4.	†Kabecruddin Ahmed, Huzrut Shah.	Sasseram.
1858 Feb.	3.	Kaliprasanno Sinha, Bábu.	Calcutta.
1863 July	1.	Kane, H. S. Esq., M. D.	Calcutta.
1859 Mar.	2.	Kásinath Roy Chaudhuri, Bábu.	Cásipore, Cal-
			cutta.
1850 April	3.	Kay, Rev. W., D. D.	Calcutta.
1861 Dec.	4.	†Kempson, M. Esq., M. A.	Bareilly.
1862 Jan.	15.	†King, W. Esq., Jr., Geological Survey.	Madras.
1839 Mar.	6.	*Laidlay, J. W. Esq.	Europe.
1861 Mar.	6.	*Laing, Hon'ble S.	Europe.
1863 Sept.	2.	Lane, T. B. Esq., B. C. S.	Calcutta.
1851 Dec.	3.	†Layard, Major F. P.	Bhagulpore.

Date of Election.			
1852 April	7.	Lees, Capt. W. N., LL.D.	Calcutta.
1859 Dec.	7.	Leonard, H. Esq., C. E.	Calcutta.
1863 May	6.	Levinge, Hon'ble E. P.	Calcutta.
1856 Feb.	6.	*Liebig, Dr. G. Von., B. M. S.	Europe.
1860 Jan.	4.	Lindsay, E. J. Esq.	Calcutta.
1861 Nov.	6	†Lloyd, Capt. M.	Toungahoo.
1862 Dec.	3.	†Lobb, S. Esq., M. A.	Dacca.
1835 Oct.	7.	Loch, G. Esq., B. C. S.	Calcutta.
1828 July	2.	*Low, Major-General Sir J., K. C. B.	Europe.
1861 April	3.	†Lumsden, Major P. S.	Murree.
1854 Nov.	1.	*Lushington, F. A. Esq., B. C. S.	Europe.
1863 April	1.	†MacDonald, Capt. D., Rev. Survey.	Bengal.
1860 Dec.	5.	Macfarlane, D. H. Esq.	Calcutta.
1848 April	5.	†MacLagan, Lieut.-Col R.	Murree.
1862 Mar.	5.	Macnamara, Dr. F. N.	Calcutta.
1853 April	6.	Macrae, Dr. A. C., B. M. S.	Calcutta.
1863 Jan.	15.	Maine, Hon'ble H. S.	Calcutta.
1860 Jan.	4.	Mair, D. K. Esq., M. A.	Calcutta.
1862 Sept.	3.	Mallet, F. R. Esq.	Calcutta.
1860 July	4.	*Man, E. G. Esq.	Europe.
1852 Nov.	3.	Manickjee Rustomjee, Esq.	Calcutta.
1861 June	5.	†Mán Sinha Bahadur, Mahárajah.	Oudh.
1850 Jan.	2.	*Marshman, J. C. Esq.	Europe.
1862 Sept.	3.	†Martin, R. L. Esq., B. A.	Dacca.
1863 Nov.	4.	Martin, R. T. Esq.	Calcutta.
1863 Oct.	7.	Martin, T. Esq.	Calcutta.
1863 Nov.	4.	McClelland, Dr. J.	Calcutta.
1862 July	3.	McCrindle, J. W. Esq., M. A.	Calcutta.
1837 Oct.	4.	†McLeod, D. F. Esq., C. B., B. C. S.	Lahore.
1860 Mar.	7.	Medlicott, H. B. Esq., F. G. S.	Calcutta.
1853 April	6.	†Medlicott, J. G. Esq., B. A.	Midnapore.
1861 Feb.	6.	†Melville, Capt. A. B., late 67th N. I. Surv. Genl.'s Dept.	Gwalior.
1855 Nov.	7.	*Middleton, J. Esq.	Europe.
1850 April	3.	*Mills, A. J. M. Esq., B. C. S.	Europe.
1863 Nov.	4.	†Modhoosoodun Doss, Bábu.	Dacca.
1860 April	4.	†Money, A. Esq., B. C. S.	Bhagulpore.
1847 April	7.	*Money, D. J. Esq., B. C. S.	Europe.
1856 Feb.	6.	Money, J. W. B. Esq.	Calcutta.
1862 July	2.	Monteath, A. M. Esq., B. C. S.	Calcutta.
1860 Feb.	1.	†Montgomerie, Capt. T. G., B. E., F. R. G. S., Trigonometrical Survey.	Dehra Dhoon.
1854 Dec.	6.	*Morris, G. G. Esq., B. C. S.	Europe.
1837 July	5.	*Muir, J. Esq.	Europe.
1854 Oct.	11.	†Muir, W. Esq., B. C. S.	Allahabad.
1859 Aug.	3.	†Murray, Lieut. W. G., 68th N. I.	Rewah.

Date of Election.			
1862 July	2.	Napier, Hon'ble Major-Genl. Sir R., K. C. B.	Calcutta.
1860 Nov.	7.	†Newmarch, Major C. D.	Pegu.
1852 Sept.	1.	*Nicholls, Capt. W. T., 24th Regiment M. N. I.	Europe.
1863 Sept.	2.	†Norman, Capt. F. B.	Lahore.
1863 Jan.	15.	Norman, Hon'ble J. P.	Calcutta.
1862 April	2.	Norman, Lieut.-Col. H. W., C. B.	Calcutta.
1859 Aug.	3.	Obbard, J. Esq.	Calcutta.
1860 June	4.	†Oldham, C. Esq., Geological Survey.	Madras.
1851 June	4.	Oldham, T. Esq., LL. D., F. R. S.	Calcutta.
1837 June	7.	*O'Shaughnessy, Sir W. B.	Europe.
1847 Feb.	10.	*Ousely, Major W. R.	Europe.
1862 May	7.	Partridge, S. B. Esq., M. D.	Calcutta.
1860 Feb.	1.	†Pearse, Major G. G.	Madras.
1861 June	5.	†Pelly, Lt.-Col. L., Bombay Army.	Bushire.
1835 July	1.	†Phayre, Lt.-Col. A. P., C. B.	Rangoon.
1862 Oct.	8.	†Poolin Behary Sen, Bábu.	Berhampore.
1863 July	1.	†Porter, G. E. Esq., C. S.	Burdwan.
1849 Sept.	5.	Pratapchandra Sinha Rajah, Bahadur.	Calcutta.
1839 Mar.	6.	†Pratt, Ven'ble Archdeacon J. H., M. A.	N. W. Prov.
1860 Jan.	4.	Preonath Sett, Bábu.	Calcutta.
1825 Mar.	9.	*Prinsep, C. R. Esq.	Europe.
1837 Feb.	1.	Prosounno Coomar Tagore, Bábu.	Calcutta.
1862 April	2.	†Raban, Major H.	Chera Poonjee.
1853 April	6.	Radha Nath Sikdar, Bábu.	Calcutta.
1849 Sept.	5.	Rajendra Dutt, Bábu.	Calcutta.
1856 Mar.	5.	Rajendralala Mitra, Bábu.	Calcutta.
1837 Feb.	1.	Ramánath Tagore, Bábu.	Calcutta.
1840 Aug.	5.	Ramgopal Ghose, Bábu.	Calcutta.
1860 Mar.	7.	*Reid, H. S. Esq.	Europe.
1854 June	7.	*Riddell, H. B. Esq., B. C. S.	Europe.
1860 Nov.	7.	†Riley, E. O. Esq., F. G. S.	Bassein.
1856 Aug.	6.	Roberts, Hon'ble A., B. C. S.	Calcutta.
1863 April	1.	†Robertson, C. Esq., C. S.	Banda.
1863 May	6.	†Robertson, H. D. Esq., C. S.	Saharunpore.
1862 Mar.	5.	†Robinson, Capt. D. G., Bengal Engineers.	Dehra Dhoon.
1853 Aug.	3.	*Roer, Dr. E.	Europe.
1847 Dec.	1.	*Rogers, Capt. T. E.	Europe.
1863 Mar.	4.	Rogers, H. M. Esq., C. S.	Calcutta.
1859 Sept.	7.	†Russell, A. E. Esq., B. C. S.	Berhampore.
1856 Feb.	6.	†Russell, R. H. Esq., B. C. S.	Midnapore.
1860 July	4.	Sampson, A. B. Esq., B. A.	Calcutta.

Date of Election.			
1863 Nov.	4.	Sandeman, H. D. Esq., B. C. S.	Calcutta.
1859 Feb.	2	†Satischunder Roy, Mahárajah.	Krishnagur.
1856 Aug.	6.	Satyasharana Ghosal, Rajah.	Bhookyias, Calcutta.
1861 Dec.	4.	†Saunders, C. B. Esq., B. C. S.	Mysore.
1854 Dec.	6.	†Saxton, Lt.-Col. G. H., 38th M. N. I.	Cuttack.
1854 May	2.	Schiller, F. Esq.	Calcutta.
1860 Feb.	1.	*Scott, Col. E. W. S.	Europe.
1859 Aug.	3.	†Scott, W. H. Esq.	Dehra Dhoon.
1863 Sept.	2.	Shama Churn Sirkar, Bábu.	Calcutta.
1860 July	4.	†Shelverton, G. Esq.	Dehra Dhoon.
1845 Jan.	14.	*Sherwill, Lt.-Col. W. S., 66th Regiment B. N. I., F. G. S., F. R. G. S.	Europe.
1859 Sept.	7.	†Sherwill, Major J. L.	Raneegunge.
1863 April	1.	†Showers, Major C. L.	Madras.
1860 July	4.	†Simpson, Dr. B.	Darjiling.
1856 Feb.	6.	*Smith, Col. J. F.	Europe.
1859 Mar.	2.	Smith, H. Scott, Esq., B. A.	Calcutta.
1862 Feb.	5.	†Smyth, Capt. E.	Almorah.
1854 Sept.	6.	†Spankie, R. Esq., B. C. S.	Meerut.
1863 Jan.	15.	†Squire, J. Esq.	Hooghly.
1859 Mar.	2.	Stainforth, H. Esq.	Calcutta.
1860 May	2.	†Staunton, Major F. S., Beng. Engrs.	Bengal.
1843 Sept.	4.	*Stephen, Major J. G. 8th N. I.	Europe.
1863 April	1.	Stephenson, J. Esq., B. A.	Calcutta.
1863 Jan.	15.	†Sterndale, R. A. Esq.	Seonee, Jub- bulpore.
1862 Oct.	8.	†Stevens, C. C. Esq.	Soorree, Beer- bhoom.
1863 May	6.	†Stevens, W. H. Esq.	Sylhet.
1863 Sept.	2.	Stewart, D. Esq.	Calcutta.
1861 Feb.	6.	†Stewart, Lieut. W. J., Bengal Artillery, Revenue Survey.	Bengal.
1861 Sept.	4.	*Stewart, Major P.	Europe.
1863 Nov.	4.	Stoliczka, Dr. F.	Calcutta.
1848 June	7.	Strachey, J. Esq., B. C. S.	Calcutta.
1843 May	3.	†Strachey, Lt.-Col. R., F. R. S., F. L. S., F. G. S.	Simla.
1859 Mar.	2.	†Stubbs, Capt. F. W., Bengal Artillery.	Mean Meer.
1861 Oct.	2.	†Sudderuddin Moonshi.	Pundooah.
1858 July	7.	†Sutherland, H. C. Esq., B. C. S.	Pegu.
1860 May	2.	†Temple, R. Esq., B. C. S.	Nagpur.
1859 Mar.	2.	†Theobald, W. Esq., Jr., Geological Survey.	Thayet-Myo.
1860 Jan.	4.	Thompson, Rev. J. C.	Calcutta.
1860 June	6.	Thompson, J. G. Esq.	Calcutta.

Date of Election.			
1863 Mar.	4.	†Thompson, Capt. G. H., Bengal Staff Corps.	Hazareebag.
1855 June	6.	*Thomson, Dr. T., M. D., F. R. S., F. L. S., F.R.G.S.	Europe.
1853 Nov.	21.	†Thornhill, C. B. Esq., B. C. S.	Allahabad.
1863 June	4.	†Thornton, T. H. Esq.	Delhi.
1847 June	2.	Thuillier, Lt.-Col. H. L., F.R.G.S., Bengal Artillery.	Calcutta.
1863 May	6.	Thuillier, Lt. H. R.	Calcutta.
1862 July	2.	Thurlow, Hon'ble T. J. H.	Calcutta.
1859 Nov.	2.	†Tickell, Lt.-Col. S. R.	Pegu.
1862 Feb.	5.	†Torrens, Col. H. D.	Simla.
1861 June	5.	†Tremlett, J. D. Esq., C. S.	Jullundur.
1863 Mar.	4.	Trevelyan, Right Hon'ble Sir C., K. C. B.	Calcutta.
1841 Feb.	3.	*Trevor, Hon'ble C. B., B. C. S.	Europe.
1863 Feb.	4.	Trevor, E. T. Esq. B. C. S.	Calcutta.
1860 Mar.	7.	†Turnbull, Lt.-Col. A. D.	Roorkee.
1861 Sept.	4.	Tween, A. Esq., Geological Survey.	Calcutta.
1863 May	6.	†Tyler, Dr. J.	Etah.
1860 May	2.	†Vanrenen, Capt. A. D., late 71st B. N. I., R. Survey.	Saugor.
1863 Oct.	7.	Waheedoon Nubbee, Maulavi, Khan Bahadoor.	Calcutta.
1861 Oct.	2.	Walagohur Mohammad, Sahebzadah.	Calcutta.
1861 May	1.	*Walker, Major J. T., Bombay Engrs.	Europe.
1863 Dec.	2.	Walker, A. G. Esq.	Calcutta.
1863 May	6.	Wall, P. W. Esq., C. S.	Calcutta.
1863 Oct.	7.	Waller, Dr. W. K.	Calcutta.
1863 Dec.	2.	Walters, Rev. M. D. C.	Calcutta.
1862 Jan.	15.	Ward, G. E. Esq. B.C.S.	Saharunpore.
1852 July	7.	*Ward, J. J. Esq., B. C. S.	Europe.
1859 July	6.	†Warrant, R. H. M. Esq. B. C. S.	Cawnpore.
1854 July	5.	*Watson, J. Esq., B. C. S.	Europe.
1847 Nov.	3.	*Waugh, Major-General Sir A. S., C. B., F. R. S., F. R. G. S.	Europe.
1862 Oct.	8.	Wheeler, J. T. Esq.	Calcutta.
1861 Sept.	4.	†Williams, Dr. C., H. M.'s 68th Regt.	Mandelay.
1859 Aug.	3.	†Wilmot, C. W. Esq.	Nya Doomka.
1862 Oct.	8.	†Wilson, R. H. Esq.	Chittagong.
1859 Sept.	7.	†Willson, W. L. Esq.	Beerbhoom.
1851 May.	7.	Woodrow, H. Esq., M. A.	Calcutta.
1859 Mar.	2.	*Wortley, Major A. H. P.	Europe.
1862 Aug.	6.	Wyllie, J. W. Esq., Bombay C. S.	Calcutta.
1855 April	4.	*Young, Lt.-Col. C. B.	Europe.
1856 July	2.	*Yule, Lt.-Col. H.	Europe.

LIST OF HONORARY MEMBERS.

Date of Election.			
1825 Mar.	9.	M. Garcin de Tassy, Membre de l' Institut.	Paris.
1826 „	1	Sir John Phillippart.	London.
1829 July	1.	Count De Noe.	Paris.
1831 Sept.	7.	Prof. Francis Bopp, Memb. de l'Academie.	Berlin.
1831 „	7	Prof. C. Lassen.	Bonn.
1834 Nov.	5.	Sir J. F. W. Herschel, F. R. S.	London.
1834 „	5	Col. W. H. Sykes, F. R. S.	London.
1835 May	6	Prof. Lea.	Philadelphia.
1840 Mar.	4.	M. Reinaud, Memb. de l' Institut., Prof. de l' Arabe.	Paris.
1842 Feb.	4.	Dr. Ewald.	Gottingen.
1842 „	4	Right Hon'ble Sir Edward Ryan, Kt.	London.
1843 Mar.	30	Prof. Jules Mohl, Memb. de l' Institut.	Paris.
1847 May	5.	His Highness Hekekyan Bey.	Egypt.
1847 Sept.	1.	Col. W. Munro.	London.
1847 Nov.	3.	His Highness the Nawab Nazim of Bengal.	Moorshedabad.
1848 Feb.	2.	Dr. J. D. Hooker, R. N., F. R. S.	London.
1848 Mar.	8.	Prof. Henry.	United States.
1853 April	6.	Major-Gen. Sir H. C. Rawlinson, K. C. B., F. R. S., D. C. L.	London.
1854 Aug.	2.	Col. Sir Proby T. Cautley, K. C. B., F. R. S.	London.
1855 Mar.	7.	Rájá Rádhákánta Deva, Báhadur.	Calcutta.
1858 July	6.	B. H. Hodgson, Esquire.	Europe.
1858 „	6.	Dr. H. Falconer, F. R. S., B. M. S.	Europe.
1859 Mar.	2	Hon'ble Sir J. W. Colville, Kt.	Europe.
1860 „	7.	Prof. Max Müller.	Oxford.
1860 Nov.	7.	Mons. Stanislas Julien.	Paris.
1860 „	7	Col. Sir George Everest, Kt., F. R. S.	London.
1860 „	7.	Dr. Robert Wight.	London.
1860 „	7.	Edward Thomas, Esquire.	London.
1860 „	7	Dr. Aloys Sprenger.	Germany.
1860 „	7.	Dr. Albrecht Weber.	Berlin.

LIST OF CORRESPONDING MEMBERS.

1844 Oct.	2.	MacGowan, Dr. J.	Europe.
1856 June	4.	Kremer, Mons. A. Von.	Alexandria.
1856 „	4.	Porter, Rev. J.	Damascus.
1856 „	4.	Schlagintweit, Herr H.	Berlin.
1856 „	4.	Smith, Dr. E.	Beyrout.
1856 „	4.	Tailor, J., Esquire.	Bussorah.

Date of Election.

1856	„	4.	Wilson, Dr.	Bombay.
1857	Mar.	4.	Neitner, J, Esquire.	Ceylon.
1858	„	3.	Schlagintweit, Herr R.	Berlin.
1859	Nov.	2.	Frederick, Dr. H.	Batavia
1859	May	4.	Bleeker, Dr. P.	Batavia.
1860	Feb.	1.	Baker, Rev. H.	E. Malabar.
1860	„	1.	Swinhoe, R., Esquire, H. M.'s Consulate,	Amoy.
1860	April	4.	Haug, Dr. M.	Poonah.
1861	July	3.	Gosche, Dr. R.	Berlin.
1862	Mar.	5.	Murray, A, Esquire.	London.
1863	Jan.	15.	Goldstücker, Dr. T.	London.
1863	July,	4.	Barnes, R. H. Esquire.	Ceylon.

LIST OF ASSOCIATE MEMBERS.

1835	Oct.	7.	Stephenson, J., Esquire.	Europe.
1838	Feb.	7.	Keramut Ali, Saiëd.	Hooghly.
1843	Dec.	6.	Long, Rev. J.	Europe.
1845	Jan.	14.	Blyth, E., Esquire.	Europe.

ELECTIONS IN 1863.

Ordinary Members.

F. Fedden, Esq., Geological Survey.	Rangoon.
M. S. Howell, Esq., C. S.	Rohilkund.
Hon'ble H. S. Maine.	Calcutta.
„ J. P. Norman.	Ditto.
R. A. Sterndale, Esq.	Jubbulpore.
J. Squire, Esq.	Hooghly.
The Hon'ble Rajah Deo Narain Singh.	Benares.
E. T. Trevor, Esq., C. S.	Calcutta.
Hon'ble A. Eden.	Bhootan.
Bábu Haridoss Dutt.	Calcutta.
H. M. Rogers, Esq., C. S.	Ditto.
The Right Hon'ble Sir C. Trevelyan, K. C. B.	Ditto.
Capt. G. H. Thompson, Bengal Staff Corps, R. Survey.	Hazareebaugh.
C. Robertson, Esq. C. S.	Banda.
Capt. D. MacDonald, R. Survey. Dept.	Darjiling.
Dr. H. Cleghorn.	Lahore.
Major C. L. Showers.	Madras.
Hon'ble R. S. Ellis, C. S., C. B.	Calcutta.
J. Stephenson, Esq., B. A.	Calcutta.
W. Edgar, Esq., B. C. S.	Dacca.
Lieut. H. R. Thuillier, Roysl. Engrs.	Calcutta.
Hon'ble E. P. Levinge.	Ditto.
P. W. Wall, Esq., C. E.	Ditto.
Dr. J. Tyler.	Etah.
H. D. Robertson, Esq., C. S.	Saharunpore.
W. H. Stevens, Esq.	Sylhet.
Hon'ble G. Campbell.	Calcutta.
Rajah Chunder Sekur Roy.	Julpigori.
Capt. G. C. Depree, Royal Artillery.	Chota Nagpur.
E. W. Clementson, Esq.	Bassein.
T. D. Forsyth, Esq., C. B.	Lahore.
Col. G. W. Hamilton.	Delhi.
T. H. Thornton, Esq.	Ditto.
C. Horne, Esq., C. S.	Benares.
H. S. Kane, Esq., M. D., Geological Survey.	Calcutta.
G. E. Porter, Esq., C. S.	Burdwan.
Bábu Bunkim Chunder Chatterjea, B. A.	Khoolneah.
Coomar Chunder Nath Roy.	Nattore.
Babu Shama Churn Sirkar.	Calcutta.
T. B. Lane, Esq., B. C. S.	Ditto.
Capt. F. B. Norman,	Lahore.
D. Stewart, Esq.	Calcutta.
Major A. D. Dickens.	Ditto.
Dr. W. K. Waller.	Ditto.
T. Martin, Esq.	Ditto.

Dr. J. Ewart, Prof. Physiology, Medl. College.	Calcutta.
Maulavi Waheedoon Nubbee Khan Bahadur.	Ditto.
W. P. Duff, Esq.	Ditto.
Major J. G. Gowan.	Saugor.
R. T. Martin, Esq.	Calcutta.
Dr. J. McClelland.	Ditto.
Bábu Modhoosoodun Doss.	Dacca.
H. D. Sandeman, Esq.	Calcutta.
Dr. F. Stoliczka.	Ditto.
J. Forsyth, Esq.	Seonee.
A. G. Walker, Esq.	Calcutta.
T. Dickens, Esq.	Ditto.
Rev. M. D. C. Walters.	Ditto.

Corresponding Members.

Dr T. Goldstücker.	London.
R. H. Barnes, Esq.	Ceylon.

LOSS OF MEMBERS DURING THE YEAR 1863.

By retirement.

W. Grapel, Esq.	Calcutta.
Bábu Rajkissen Roy.	Berhampore.
H. Braddon, Esq.	Calcutta.
Rev. T. H. Burn.	Ditto.
J. J. Grey, Esq.	Shahabad.
D. Fitzpatrick, Esq.	Dhurmsala.
Hon'ble Sir Mordaunt Wells.	Europe.
Lient.-Col. H. C. James.	Calcutta.
S. Wauehope, Esq., C. B. B. C. S.	Ditto.
Sanders, J. Esq.	Ditto.
Fitzgerald, Major C. M.	Ditto.
Dr. G. Gordon.	Ditto.

By Death.

Bábu Sumbhoo Chunder Roy.	Rungpore.
Mahárajah Narendra Nárain Bhupa.	Cooch Behar.
Dr. J. Browne.	Calcutta.

FOR FEBRUARY, 1864.

The monthly general meeting of the Asiatic Society was held on the 3rd instant.

A. Grote, Esq., senior member, in the chair.

The proceedings of the last meeting were read and confirmed.

The Chairman informed the Society that the accounts not having been returned by the auditors, it would be necessary to defer their submission to the Society's meeting for another month.

Presentations were received—

1. From H. M. Smith, Esq., a dead chicken with four legs.
2. From Lieutenant R. C. Beavan, specimens of an Albatross and a Tern from the South Seas.
3. From H. L. Haughton, Esq., specimens of four sea snakes from Hidgelli; also a white-breasted bat.
4. From Lieutenant-Colonel Tytler, four large slabs of wood carved with figures of Hindoo idols, from the palace of the Kaiser Bagh, Lucknow; also a box containing the skeleton of a mule.

The following extract from a letter which accompanied the presentation was read:—

“I got these slabs in the palace of the Kaiser Bagh, Lucknow, after the siege. They form a square, and all hook together. The only history I could gather about them was that it was a sort of portable place of pilgrimage representing the holy shrines in the Himalayas for the old, weak, and infirm, who could not undertake the pilgrimage to the real place; so they had to ascend the steps on this model and offer their offerings at each shrine, &c., presented in the carvings. I have also told Mr. Lazarus to give you for the Museum an old box containing a lot of old bones: it is the skeleton of a mule, *Equus onager*. I hope you will find him pretty perfect.”

5. From Lieutenant Waterhouse, several photographs of archaeological remains in Central India, to replace imperfect prints in the set presented to the Society some months ago.

The Chairman proposed, on the part of the Council, that the Right Hon'ble Sir John Lawrence should be requested to become the patron of the Society.

Letters from Messrs. H. M. Rogers, J. Stephenson, and D. H. Macfarlane, announcing their withdrawal from the Society, were recorded.

The following gentlemen duly proposed at the last meeting were balloted for and elected ordinary members :—

Hon'ble Sumbhoo Nath Pundit, Baboo Kaliprosunno Dutt, H. Leeds, Esq., A. M. Verchere, Esq., M. D., and Lieutenant A. Pullan.

The following gentlemen were named for ballot as ordinary members at the next meeting :—

H. R. Spearman, Esq., proposed by Mr. W. Theobald, Jr., seconded by Mr. Grote.

C. J. Wilkinson, Esq., barrister-at-law, proposed by Mr. H. F. Blanford, seconded by Mr. W. L. Heeley.

F. H. Pellew, Esq., C. S., proposed by Mr. Heeley, seconded by Mr. H. F. Blanford.

Baboo Jugodanund Mookerjee, proposed by Captain W. N. Lees, seconded by Baboo Rajendralal Mitra.

Lieutenant E. A. Trevor, H. M.'s Bengal Engineers, proposed by Mr. Grote, seconded by Mr. H. F. Blanford.

Dr. W. J. Palmer, proposed by Dr. Partridge, seconded by Dr. Fayrer.

Lieutenant G. M. Bowie, Madras Staff Corps, proposed by Mr. Geoghegan, seconded by Mr. Blanford.

The Council reported that they had appointed the following sub-committees for 1864 :—

FINANCE.

Lieutenant-Colonel H. Hyde and Baboo Rajendralal Mitra.

PHILOLOGY.

A. Grote, Esq., Captain W. N. Lees ; Baboo Rajendralal Mitra, and E. B. Cowell, Esq.

LIBRARY.

Captain W. N. Lees ; Baboo Rajendralal Mitra ; H. B. Medlicott, Esq. ; Dr. T. Anderson ; H. Scott Smith, Esq. ; E. B. Cowell, Esq. ; T. Oldham, Esq. ; A. Grote, Esq. ; and Hon'ble L. S. Jackson.

NATURAL HISTORY.

Dr. T. Anderson ; A. Grote, Esq. ; Dr. A. C. Macrae ; Dr. J. Fayrer ; Dr. T. C. Jerdon ; T. Oldham, Esq. ; W. S. Atkinson, Esq. ;

W. Theobald, Esq., Jr.; Dr. S. B. Partridge; H. B. Medlicott, Esq.; and Dr. F. Stoliczka,

METEOROLOGY AND PHYSICAL SCIENCE.

The Ven'ble J. H. Pratt; T. Oldham, Esq.; J. Obbard, Esq.; Colonel R. Strachey; Lieutenant-Colonel J. E. Gastrell; Lieutenant-Colonel J. T. Walker; Captain T. G. Montgomerie; H. Leonard, Esq.; and H. Scott Smith, Esq.

COIN COMMITTEE.

A. Grote, Esq.; Captain W. N. Lees; and Baboo Rajendralal Mitra.

COMMITTEE OF PAPERS.

Colonel R. Strachey; A. Grote, Esq.; and E. B. Cowell, Esq.

The Secretary read the following letter from Mr. Bowring forwarding copy of an inscription found in the hands of some Brahmins of Anantpore, a village in Mysore:—

“I send you a copy of a *sashana* or inscription on copper, which I found in the hands of some Brahmins of a village in the jungles of Anantpore about four miles N. E. of the Kusba. I copied the first bit myself, and left the *sashana* with the tehseldar, with a view to his getting the rest copied, which he did; but I cannot say whether it is quite correct, as I did not see the copier and was obliged to leave before he made his appearance. The deed may be of interest.

“I have seen a vast number of inscriptions on stone slabs, but I believe the whole of these were copied by Walter Elliot. They are all in old Canarese, and I have not seen one in Sanskrit, except one illegible inscription at Banawasi.”

Communications were received—

1. From Baboo Gopeenauth Sen, abstracts of the Results of the Hourly Meteorological Observations taken at the Surveyor General's Office in November last.

2. From Baboo Rajendralal Mitra, a paper on the Buddhist remains of Sultangunge.

Mr. Blanford read extracts from a paper by W. Theobald, Jr., Esq., entitled “Notes on the variation of some Indian and Burmese Helicidæ,” and made some remarks on the subject of it.

Mr. Heeley also read extracts from a paper by Dr. J. E. T. Aitchison, on “The Vegetation of the Jhelum District of the Punjab.”

The paper having been read, a discussion ensued, in which Dr. Brandis, Colonel Strachey, and Mr. Heeley took part. The papers will appear in the Journal in due course.

The Librarian submitted his report of the accessions to the library since the meeting held in October.

LIBRARY.

The undermentioned books have been added to the Library since the meeting held in October last.

Presented.

The Annual Report of the Geological Survey of India, for 1862-63.—BY THE BENGAL GOVERNMENT.

The Annual Report on the operations of the Post Office of India, for 1862-63.—BY THE SAME.

Annual Report on the Administration of the Bengal Presidency, for 1862-63.—BY THE SAME.

Annual Report on the Administration of the Punjab Territories, for 1862-63.—BY THE SAME.

Annual Report on the Administration of the Province of Oudh, for the year 1862-63.—BY THE SAME.

Annual Report on the Administration of the Central Provinces for the year 1862-63.—BY THE SAME.

Annual Report on the Administration of the Straits Settlement, for 1862-63.—BY THE SAME.

Annual Report of the Branch of the Marine Department, under control of the Govt. of India, for 1862-63.—BY THE SAME.

Beretning sundhedstilstanden og medicinal forholdene i Norge, I Aaret, 1859.—BY THE CHRISTIANIA UNIVERSITY.

Bombay Magnetical and Meteorological Observations for 1862.—BY THE BOMBAY GOVERNMENT.

Bijdragen tot de Taal-Land-en Volkenkunde van Nederlandsch Indie, Vol. VI. Stuk 7, and Vol. VII. Stuk 1.—BY THE COPENHAGEN SOCIETY.

Boeck's Recherches sur la Syphilis.—BY THE CHRISTIANIA UNIVERSITY.

The Calcutta Christian Observer for October, November, December and January.—BY THE EDITOR.

Cole's Manual of the Mohammedan Civil Law.—BY THE TRANSLATOR.

Forhandlinger Videnskabs—Selskabet i Christiania Aar 1861.—BY THE CHRISTIANIA UNIVERSITY.

Fay's om Indvirkungen af Forskjellje.—BY THE SAME.

On the Formation and Institution of the Caste system in India,—the Aryan polity.—BY BABU GANENDRO MOHUN TAGORE.

Geologiske Undersogelser Bergens Omegu.—BY THE CHRISTIANIA UNIVERSITY.

Generalberetning Fra Ganstad, 1861.—BY THE SAME.

Holmboe om den Nordisk.—BY THE SAME.

Ditto om Oprindelsen af det Skandinaviske Vægtsystem i Middelalderen.—BY THE SAME.

Hardy's Sacred books of the Buddhists compared with History and Modern Science.—BY REV. J. NICHOLSON.

Journal of the Chemical Society of London, 2nd Series, Vol. I. Nos. 7 to 9.—BY THE SOCIETY.

Journal of Sacred Literature and Biblical Record, New Series, No. 7.—BY THE EDITORS.

Reise der Novara um die Erde. Nautisch-physical Theil. II. Abth.—BY THE TRIESTE ACADEMY.

Ethnographic Map of Finmark Nos. 1 to 5, with an explanatory table.—BY THE CHRISTIANIA UNIVERSITY.

Map of Kafiristan.—BY THE SURVEYOR GENERAL OF INDIA.

Index Map to Trigonometrical Survey Maps.—BY THE SAME.

Mahábhárata, Ádi and Sabhá parvas text and Bengali translation.—BY THE MAHÁRAJAH OF BURDWAN.

Memoirs of the Geological Survey of India, Vol. III Parts 1 and 2.—BY THE GOVERNMENT OF INDIA.

Ditto ditto Vol. III. Part 2.—BY THE SUPERINTENDENT OF THE GEOLOGICAL SURVEY OF INDIA.

Meteorologische Beobachtungen auf Christiania's Observatorium for 1842-47.—BY THE CHRISTIANIA UNIVERSITY.

Memoires de la Societe Imperiales des Sciences Naturelles de Cherbourg, Vol. VI.—BY THE SOCIETE DE CHERBOURGH.

Murdoch's Indian Year-Book for 1862.—BY THE COMPILER.

Narrative of the Course of Legislation for 1862-63.—BY THE BEN-GAL GOVERNMENT.

Oriental Baptist for August 1863, Vol. XVII. No. 200.—BY THE EDITOR.

Proceedings of the Royal Geographical Society of London, Vol. VII. Nos. 4 and 5.—BY THE SOCIETY.

Report of the Committee of the Bengal Chamber of Commerce from 1st May to 31st October, 1863.—BY THE CHAMBER OF COMMERCE.

Annual Report on the Administration of British Burmah, for 1862-63.—BY THE BENGAL GOVERNMENT.

Report on the Police of the Town of Calcutta and its Suburbs for 1862-63.—BY THE SAME.

Report on the Administration of the Madras Presidency during the year 1862-63.—BY THE SAME.

Revue Orientale et Americaine, No 47.—BY THE PARIS ETHNOGRAPHICAL SOCIETY.

Report on the Administration of the N. W. Provinces, for 1862-63.—BY THE BENGAL GOVERNMENT.

Report on the Hyderabad Assigned Districts for 1862-63.—BY THE SAME.

Report on the Trade and Resources of the countries on the North West boundary of British India, with a Minute by Sir Robert Montgomery.—BY THE GOVERNMENT OF INDIA.

Reisen im Süden Von Ost-Sibirien, Band I.—BY THE SOCIÉTÉ GÉOGRAPHIQUE IMPÉRIALE DE RUSSIE.

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LÁLGOPÁL DUTT.

3rd February, 1864.

JOURNAL

OF THE

ASIATIC SOCIETY.

No. II. 1864.

*An Account of Upper Kásh-kár, and Chitrál, or Lower Kásh-kár, together with the independent Afghán State of Panj-korah, including Túl-ásh.**

Most modern travellers have either not mentioned the two first-named countries at all in their works, or have, from ignorance of oriental languages, or carelessness in writing names, so confounded them with a province of Chinese Túrkestán, that their very existence has been called into question, and even totally denied, by many authors.

Mr. Elphinstone, in his excellent work—"The Kingdom of Caubul," remarks on this very subject in the following manner:—"The resemblance of the names led us into great mistakes when we first arrived at Pesháwar. We bought tea, which we were told was brought from Kaushkaur (Cashgar), and the first people whom we asked respecting the distance told us we might easily go to Kaushkaur, and return within a fortnight. In time, however, we obtained more precise information." These doubts and mistakes have been solely occasioned by not taking proper account of the mode of writing, and the pronunciation of the names of the two countries; that of Chinese Tartary being written كاشغر (*kásh-ghar*), whilst that of which I intend giving some account, is written قاشقار (*kásh-kár*), a very different sound to that of the former.

The native land of all the chimeras of Bákhtro-Indian origin, contained in the mythological system of the ancient Persians, as indicated

* Being the continuation to "Notes on Káfristán," in No. 4 of the Journal for 1859.

from the ruins of Persepolis, is the range of mountainous country which separates Bákhtríánah from Hindústán and China, bounded on the east and north by the desert of Kobi; and, as we gather from the first chapter of the Zand-áwestah, is included in the country therein called Eriene—the supposed abode of the old Medo-Persian race. It was celebrated for its gold and gems, and other precious productions, which it continues to yield, in some degree, up to the present time. It is also the legendary abode of the traditionary monsters, celebrated in Oriental poetry and fable, now become familiar to the natives of the west.

In this mountainous range lies Kásh-kár, or Chitrál, as the lower portion of the valley is also named; it is what has been sometimes called the country of Sháh Kaṭor. It is included in the valley of the upper sources of the river best known as the Kámah, and the Kunar.*

Kásh-kár (concerning which, probably, less is known than of any other part of Central Asia, not including even Káfiristán), is bounded on the north by the high land of Pámír; south by the Lás-púr range of mountains, bounding the Afghán district of Panj-korah to the north; north-east by the mountainous region to the west of the Yár-kand river, known to the people of these regions as Bilauristán or the "Region of Crystal,"† from the quantity of that substance with which it abounds; south-east by Gilgitt and Little Thibet; and west by the hills of Wákhán, bordering the left bank of the river Oxus, and separating Chitrál, or Lower Kásh-kár, from Badakhshán and the eastern frontier of Káfiristán, running parallel to the right or northern bank of the Chitrál or Kásh-kár river. It is a long valley into which a series of smaller valleys and defiles open out, which, in the northern part, act as water-courses to drain Pámír. It is oblong in form, and runs almost in a north-east and south-west direction. It resembles Káfiristán in physical appearance and coldness of climate;

* On looking over the paper on Káfiristán, I find the name of this river has been printed "Kunir" and "Kuner." This spelling, however, is not right: "Kunar" is the correct orthography. In the same paper also, "Bájawor" appears instead of "Bájáwr."

† "There are certain other mountains called *Bilor* (Bilaur) in the country of the tribe of Turks denominated Hamilán. In two days' journey you arrive at another part of Túrkiistán where the Bhotyas and Dyán dwell. Their king is Bhot Shah, and their cities are Gilgitt, Asúrah (Astor?), Salas (Chilás?), etc., and their language is Túrki." Sir H. M. Elliot's INDEX TO MUHAMMADAN HISTORIANS, page 81, vol. I. See also the extract from Khushhál Khán's Pushto poem, in the "ACCOUNT OF SUWÁR;"—Journal for 1862, page 278.

but it lies somewhat higher, and although rough and difficult in many places, it contains a greater portion of *plateaux*, and a greater number of level and open valleys. In some parts, also, it is well sheltered; and the soil, generally, is rich and fertile, producing much grain, and several descriptions of fruit.

It is divided into two states—Kásh-kár-i-Bá-lá, or Upper Kásh-kár, and Kásh-kár-i-Pá-in,* or Lower Kásh-kár—both of which are ruled by separate chiefs, entirely independent of each other; but, at the same time, on the most friendly terms.

The former principality is less known than the latter; hence the two have often been confounded together, and called the country of Sháh Kaṭor. Both rulers are absolute over their subjects, and have the reputation of selling them into slavery without the slightest compunction. The people are designated among themselves by the general name of Chitrár.

LOWER KÁSH-KÁR.

Lower Kásh-kár, or Chitrál, is the real country of Sháh Kaṭor, and is the most westerly of the two states. It lies immediately under the southern slopes of the mountains of Hindú Kush, which separate it from Badakhshán; and through the centre of this state, as well as of Upper Kásh-kár, the river, here named after the country fertilized by its waters, flows to the south-west, and joins the Kánah at Cheghán-sarác.†

The chief town or capital of Lower Kásh-kár is Drúsh, the residence of Tajammul Sháh, the son and successor of Sháh Kaṭor, who appears

* For the information of "Comparative Philologists," I beg to say that the words *Bá-lá* and *Pá-in* are Persian.

† "The original country of the *C'hasas* seems to have been the present country of Cashgar to the N. E. of Cabul; for the *C'hasas*, in the institutes of Menu, are mentioned with the Daradas, who are obviously the *Dardæ* of Ptolemy, whose country now called *Darad* by the natives, and *Daward* by the Persian authors, is to the N. W. of Cashmir; and extends towards the Indus: hence Ptolemy, with great propriety, asserts, that the mountains to the north-east of Cabul, are the real Caucasus. The country of Cashgar is situated in a beautiful valley, watered by a large river, which, after passing close to Chágá Seray, Cooner, and Noorgul, joins the *Lundy Sindh*, or little *Sindh*, below Jelálábád, in the small district of *Cameh* (for there is no town of that name), and from this circumstance the little *Sindh* is often called the river *Cameh*. **** Cashgar is also *Cashtwar*, which denomination is generally distorted into *Kétwer* and *Cuttor* by Persian authors and travellers. The town and district of *Ketwer*, mentioned in the life of Amir Timur, is different from this; and lies about fifteen miles to the N. W. of Chágá Seray, on a pretty large river, which comes from Vahí Gálamb: it is generally pronounced *Catowr*." WILFORD: *On Mount Caucasus*;—*Asiatic Researches*, Vol. VI. pp. 437-8.

to have been a good ruler, and deservedly popular. He was, however, a soldier of fortune originally, and dethroned the rightful sovereign, a grandson of whom Vinge met with, living under the protection of the kind-hearted and hospitable Ahmad Sháh, the Gylfo or prince of Little Thibet. The town is situated in the centre of the valley on a rising ground, on the eastern, or left, or southern bank of the river previously referred to, and over which there is a large and well built wooden bridge, considered by the natives a somewhat wonderful object. The town is said to contain about two thousand houses, and between nine and ten thousand inhabitants. All the chief men of the country have dwellings of considerable size in the capital, where they are expected chiefly to reside. Persons engaged in trade to any extent, together with artizans and mechanics, also dwell almost exclusively at Drúsh.

The other considerable towns are,—Lás-púr (giving name to the mountains so called) to the east of Drúsh and north of Drál;* Puritt to the north of Drúsh and south of Ash-rít; Ash-rít north of Puritt and east of Drúsh; Bedlur† to the northward of Drúsh and south of Hích-gun.

The country lying to the south of the capital is thinly peopled; but towards the north-east and west, it is very populous. The inhabitants are Muhammadans professing the Shí-áh doctrine, the same as followed by the Persians of the present day.

All complaints of importance, and cases of litigation, are investigated and determined at Drúsh by the ruler himself; indeed, all complainants residing within four days' journey, are required to appear before the supreme authorities in all cases. Persons dwelling at a greater distance are permitted to appear before the subordinate chiefs, who are empowered to hear and decide matters of minor importance, subject to appeal to the Sháh.

Tajammul Sháh can collect, upon occasion, a force of 12,000 match-lock-men, who are not paid in money for their services, but in kind. The whole of the people are well provided with fire-arms with rests; indeed, there are few persons without arms. These match-locks are long and heavy, similar to those of Túrkestán (from whence, most likely, they are obtained) and carry a ball a long distance. The Kásh-

* A valley containing several small hamlets, belonging to Panj-korah. See page 23.

† Bilaur (crystal) ?

káris are excellent marksmen; and powder and lead being exceedingly expensive, when they do discharge their pieces, it is generally with effect; and no shots are thrown away.

About 10,000 S'áh-posh Káfirs,* of the Kámúz tribe, who inhabit the upper, or northern part of the valley of the Kásh-kár or Chitrál river, lying nearest to the valley of the Kok-cháh river of Badakhshán, and north of the country held by the Kattár and Kampar tribes of S'áh-posh, are subject to the Sháh, to whom they pay a small tribute. Their religion is not interfered with; and they are, upon the whole, very obedient subjects, and are unlike the generality of mountain tribes, inasmuch as they do not rob. The Askín Káfirs, a great portion of whom have embraced Muhammadanism, as well as the Ashpíns, are also subjects of the ruler of Lower Kásh-kár, as already mentioned in my account of that people.

UPPER KÁSH-KÁR.

This is the territory of Gauhar Amán Sháh, surnamed Chál, son and successor of Malik Amán, the former ruler. The people are Shíáh Muhammadans—that is to say, if a person should ask them what religion they profess, they will answer that they are Musalmáns and Shíáhs; but if he enquire of them what is meant by the word Shíáh, they will probably say they do not know. In the other state of Chitrál, or Lower Kásh-kár, the people, as far as prayers, fasts, and other exterior observances go, are Muhammadans; but there are few signs of it in Upper Kásh-kár.

The chief town is Más-túch, or Más-toj, lying about three stages or *manzila* of 25 coss, or 37 to 38 miles each, N. N. W. from Gilgitt; but it is a place of no great size, containing only four hundred houses, and about 2,000 inhabitants. It lies in the same valley as Lower Kásh-kár; and also stands on the right or western bank of the Chitrál or Kásh-kár river, but nearer its source. The town is protected by a small fortress; and the main routes followed by the caravans of merchants from Pes'háwar, Badakhshán, and Yárkand, meet here. Gauhar Amán, the ruler, resides a good deal at Yasín, which is a still smaller place than Más-túch, but it is more conveniently situated, being nearer towards Dar-band, the fortified pass leading into the country, towards the west. There are numerous ancient ruins in this neighbourhood. Drúsh, the capital of

* See "*Notes on Káfiristán*" in the Journal for 1859.

Lower Kásh-kár or Chitrál, lies to the south-west of Más-túch. To the east of the latter place is Hích-gún, to the south of which again is Shotai.

The elevated *plateau* of Upper Kásh-kár is inclosed by towering hills surrounding it on all sides, except towards the south-west, in which direction the Kásh-kár or Chitrál river, so often referred to, flows. At the same time, however, it must be remembered, that the whole of Kásh-kár, both Upper and Lower, is crossed by several smaller ranges of hills, and by numerous narrow valleys, some of which are of considerable length.

Several passes lead into the two Kásh-kárs, the chief of which is the *Kotal Lahori*, or Lahori Pass leading into Panj-korah through the Lásipúr mountains, dividing the latter from the former state. By this route Más-túch may be reached from Drúsh, which is distant three manzils or stages, occupying two nights and a day, in the summer months. The Sí'áh-fosh Káfirs infest the Pass at times, and plunder travellers. The road is also somewhat difficult between Panj-korah and Drúsh; but beyond, it is very good; and the country is like a vast plain, gradually sloping upwards towards the high land of Pámír, to the north and east. The roads throughout Lower Kásh-kár or Chitrál, and Upper Kásh-kár, are generally good, and clear of much obstruction; consequently, there would be no difficulty for the passage of light artillery.

The nearest road from Chitrál or Lower Kásh-kár to Badakhshán lies across the range of Hindú Kush—called the Badakhshán Ridge by Macartney*—on the northern slope of which a small river rises, and after flowing about twenty-five miles, enters the Panj, or Upper branch of the Oxus, at Ishtarak in the latter country. The path lies along the banks of this stream, and is only practicable in the summer months, and then only for persons on foot, who can thus reach Chitrál in three days.

Another route into Badakhshán, practicable for beasts of burden, and that pursued by caravans of merchants and traders, is by the Más-túch Pass—so called from the town of that name—and by descending from thence, along the banks of another small stream, rising on the northern slope of the mountains bounding Lower Kásh-kár to the north-east, which falls into the Panj at Issár (His-ár?) in the

* Elphinstone's *Cabul*: Vol. 2nd, Appendix D. pp. 458.

canton of Wákhn.* This is the main road between Badakhshán and Gilgitt to Kashmir. The Yárkand road branches off from Issár to the north, through the *darah* or valley of lake Sir-í kol† over the table land of Pámír.

Further west there is another Pass into Badakhshán, called "*Kotal-i-Nuksán*," or the "Defile of Mischief." This road winds along the face of tremendous precipices, and through frightful defiles, by which the hamlet of Gáo-khánah (signifying "Cow-house" in Persian,) lying in a plain, may be reached in two or three days. Further north is Rabát, ('Robat' of Wood) on the Wardoj river. A route into Káfiristán joins the above road amongst the defiles of Hindú Kush, by which the districts held by the Kámúz, Askín, and Ashpín tribes of Si'áh-posh Káfirs may be reached in from three to four days, without much difficulty, in the summer months.

To the north-east of Upper Kásh-kár (which some also term Shagh-nán), is Shágat, distant five *manzils* or stages. It is also called Kásh-kár, so I am informed; but the people are different in their manners and customs, and are under a different ruler.

The river of Chitral or Kásh-kár, also known as the Cheghán-sarác, from the small town of that name, near which it falls into the Kámah, or Kunar, as it flows south to join the river of Kábul, appears—as I have already pointed out at page 3—to have been long confounded with the Kámah or Kunar, of which it is only a feeder. The Chitral river rises at the "*Taláb-i-Níl*," or "*Cerulean Lake*."‡ This lake must not be mistaken for lake Sir-i-kol,§ from which the Panj, or

* "At Issar 10,000 feet, on the termination of the main valley of the Oxus, the road divides into two, which when beyond Killah Panj bore respectively E. 20° S., and N. 40° E. The former conducted to Chitral, Gilgit, and Kashmir, and the latter across the table-land of Pamir to Yarkand." WOOD.

† "There is a Pass called Mustodj, or Mastuch, which joins the valley of Wakan (Wákhn). I suppose that the name may be extended to the mountains bounding Chitral on the eastward, as I was told that after crossing the Mastuch Pass, the traveller descends with a stream for several days until he reaches Chitral, the country of Shah Kator." Vigne: "Travels in Kashmir;" Vol. II. p. 309.

‡ "An individual who had seen the region between Wakhan and Kashmir informed me that the Kunir (Chitral) river had its principal source in a lake resembling me that in which the Oxus has its rise, and that the whole of this country, comprehending the districts of Gilgit, Gunjit, and Chitral, is a series of mountain defiles that act as water courses to drain Panir." "Wood's Journey to the Oxus."

"There is said to be a lake in Shaghnan, half a day's journey in circumference, which drains the country on the left bank of the Panj, as the Oxus is here called." IBID.

§ *Sir* in Persian signifies the head, top, summit; great, highest, etc.; and *kol*, in the same language means a pond, a reservoir, a lake, and so forth.

main branch of the Oxus takes its rise ; for the Taláb-i-Níl lies much further to the south. The river of Kásh-kár flows from it, and having passed Mús-túch on the west, flows towards the south and south-west, through the two states of Kásh-kár, and joins the Kámah or Kunar at Cheghán-sarác, as before stated. The existence of this lake was mentioned to Lieut. Wood by natives of Badakhshán, and it is also corroborated by the account of Moorcroft and Trebeck,* who call the lake by the name of Hamú-sar ; but which, if it is a Persian name, as it appears to be, would rather seem to refer to that of "Sir-i-kol," the source of the Oxus, and then, interpreted, would signify the "Head or Source of the Hamú," which latter word, in all probability, is more correctly Amú, (امو) the name by which the Oxus is known to the natives of these regions.

North of Mús-túch all the streams take a northerly course towards the Oxus and the river of Yárkand ; whilst those south of Mús-túch run towards the south, and are, ultimately, absorbed into the Indus.

From Upper Kásh-kár, the road to Gilgit lies to the south, south-east ; and that place is seven stages distant. From thence, pursuing a westerly route, Little Thibet is reached in another seven stages. The Kashmír route lies to the south of Thibet, and is distant about eight stages.

The dress of the people of Upper and Lower Kásh-kár, from the severe nature of the climate of the country, consists of a number of garments worn one over the other. They are made with immense sleeves ; and, when on, lie in a number of folds or rolls. The dresses of the women are made longer and more loose than those of the men, and assimilate, in some measure, to the dress worn by the females of Kashmír.

The men are tall and well made ; and the females are remarkable for their beauty,† which is said to surpass that of the Sí'áh-posh women.

* "Westward from Gilgit is Chitrál, distinguished as Upper and Lower. The latter, which is nearest to the Hindu Kush, is situated on a river flowing from a lake called Hamú-sar, and ultimately falling into the river of Kábul."—MOORCROFT AND TREBECK.

† "Close to Gand'hamádana, along the banks of the Apará Gándicá, or western Gándicá, is the country of the Cetu-mála, 34,000 Yojanas in length, and 32,000 broad. The Cetu-málas are mighty in deeds, strong, and powerful, the women bright like the Lotus flower : and whoever sees them, falls in love with them."—WILFORD, on the Sacred Isles of the West : ASIATIC RESEARCHES Vol. VII., page 359.

who are so much celebrated for their good looks. A great many people are yearly sold into slavery ; and a boy or a girl can, generally, be purchased for one hundred rupees. The more comely of the females fetch high prices, varying from five hundred to one thousand rupees. Two or three hundred slaves are sent annually into Túrkiistán, by the Darwán Pass of Badakhshán, and constitute one of the chief exports from the country.

The imports consist of salt, which is very expensive ; chintzes and other piece-goods of low price and coarse texture from Yárkand, Pes'háwar, and Badakhshán, together with boots and shoes, metals, and a few pearls and precious stones from the latter country ; tea, sugar, and horses from the former state ; sundries, consisting of needles, thread, scissors, knives, combs, &c., of rough workmanship, from Kashmír, and Pes'háwar ; iron from Panjkorah ; *gur* or coarse sugar, spices, medicines, matchlocks, swords, ammunition, and copper cooking utensils.

The other exports besides slaves, are unbleached silk, the produce of the country, and known amongst the traders of Kábul and other parts of Central Asia, as *koráh** *Kásh-kári* ; shawls also the peculiar manufacture of the country, the woof of which, termed (پود) *púd*, is sometimes of a coarse description of silk called *patt†* by the *Kásh-káris*, and sometimes of cotton, and the warp called (تار) *tár*, of pure silk. These are rather expensive, ranging in price from twenty rupees ; but a cheaper description is manufactured, the woof of which is of wool, and the warp of cotton, and which can be procured as low as two rupees each ; *chokahs*, or cloaks with sleeves, the cloth of which is woven from *pashm*, a species of wool or fur, of three different colours, with which all animals, even dogs, are provided, in this cold region, but more particularly goats. It is called shawl-wool. These garments vary in price from one to twenty rupees.

The peculiar method of weaving these mantles or *Kásh-kári* shawls brings to mind a passage in Pliny with regard to the fabric from which the Coan vests, so much esteemed by the Greeks and Romans, were made. Heeren in his "Asiatic Nations," also refers to the subject in the following terms. "The first Grecian author who has made mention of the silk-worm, and described its metamorphosis, is Aris-

* In Hindí means "unbleached" or "raw."

† The terms پود and تار are Persian. The Sanskrit for silk is रश्मि *patt*.

totle in his Natural History. His account, however, does not tally with the silk-worm known in Europe; and it is probable that he had another species in view, though his commentators are by no means agreed on this point. He tells us that the web of this insect was wound off by women, and afterwards woven; and names a certain Pamphyle, of Cos, as the inventress of this art. Whence then was the raw material derived? The Grecian philosopher does not expressly inform us, but Pliny,* who has translated his works, and perhaps had a more accurate copy before him than we possess, speaks of Assyrian,† that is, Asiatic silk, and interprets in this manner the obscure expressions of Aristotle. The Grecian women, he says, ‘*unravel the silken stuffs imported from Asia, and then weave them anew*; whence that fine tissue, of which frequent mention is made by the Roman poets under the name of *Coan vests*.’ A celebrated scholar understands this passage as implying that all the Asiatic garments, described as silken, were in fact *only half composed of silk*, and supposes that the Grecian women *separated the two materials of which they consisted, and that the cotton wool having been withdrawn, the texture was filled up with silk alone*.”‡

Kásh-kár is, by no means, a poor country; in many places it is well sheltered; and the climate, on the whole, is temperate, but, in winter, it is severe. The soil is rich and fertile, producing much grain, including great quantities of rice. European fruits, such as apples, pears, apricots, plums, peaches, etc., are produced in great quantities, as well as excellent grapes, from which vast quantities of wine are made; for the Kásh-káris, although professing Muhammadanism, are, like their neighbours, the Si’áh-posh Káfirs, and the people of Gilgitt, notorious for their wine-bibbing propensities.

The herds and flocks, particularly the latter, constitute the chief wealth of the inhabitants of Kásh-kár and the neighbouring petty states, and for which they have been celebrated from remote antiquity.§

* PLINY, XI. C. 22 and 23.

† Bakhtrá and the regions between the Indian Caucasus and the Indus were included in the Assyrian empire.

‡ Foster, De Byssos Antiq. p. 16.

§ “In the mountains also of northern India, the district of Belur (Bílauris-tán), or vicinity of Cashmire, were found then, as at present, large flocks of sheep which constituted the wealth of the inhabitants.” CTESIAS: XIII. 22.

There is no fixed rate of taxation in either of the two states ; sometimes a fifth or a fourth of the produce is levied ; but, at times, as much as one half has been collected.

Trade is chiefly carried on by means of barter, money being very scarce.

The language of both Upper and Lower Kásh-kár contains a great proportion of Persian words. This, however, is no matter of surprise, when we consider that these countries formed a portion of the extensive empire of the Persians. The people are said to express themselves with much circumlocution.

The Venetian traveller, Marco Polo, appears to have visited Kásh-kár, which he thus briefly describes. "At length you reach a place called Kásh-kár. The province is extensive, and contains many towns and castles, of which Kásh-kár is the largest and most important*** Besides the Muhammadans, there are amongst the inhabitants several Nestorian Christians." The matter of the Nestorians is a somewhat difficult one to solve. The Sîáh-posh tribes, inhabiting a portion of the valley of the Kásh-kár river, may probably be the people he referred to ; and whom, differing widely in manners and customs from the Muhammadans of those parts, he, without due inquiry, and chiefly, if not solely, on native report, may have fondly concluded to be Christians.

INDEPENDENT AFGHÁN STATES.

The petty states at present held by the powerful and numerous Afghán tribe of Yúsufzí, the most turbulent, and the most independent of the Afghán clans, who have reduced the original inhabitants of these countries to a state of vassalage since their exodus from Kábul in the reign of Mirzá Ulagh Beg, grandson of Tímúr (the account of Herodotus and the *Πάκρυς* of the Pes'háwar oracle notwithstanding) in which they themselves reign in feudal turbulence—consist of Panj-korah, including that part of the "*Sama'h*"*—above the junction of the Panj-korah river with the river of Suwát, called the district of Talásh ; Suwát ; Buner ; and Chumlah ; the whole lying to the north of the British possessions, part of which includes the south-western portion of the Sama'h, lying nearest to the left bank of the Landqacy or Panj-korah river. I have given a description of the valley of

* A Pus'hto word signifying "a plain."

Suwát, in a late number of the Journal. The other two districts are, comparatively, little known.

PANJ-KORAH.

Panj-korah, a compound word, signifying "five houses or clans," from the Persian "*panj*," "five," and the Pus'hto, "*kor*," "a house, clan, tribe, etc.," is so called from the five clans of the Malí-zí subdivision of the great Afghán tribe of Yúsuf-zí, which originally peopled it, after the conquest of those parts, north of the Kábul river, by the Afgháns about the beginning of the sixteenth century. Those clans were, Pá'indah Khel, Doshah Khel, Sarandí Khel, Sultán Khel, and Pá'í Khel. At present there is a slight difference, from the fact of other clans having sprung up, during the course of so many years.

Panj-korah is the most important, and most considerable of these minor independent Afghán states, lying almost immediately under the southern slopes of Hindu Kush. It runs in a north-east and south-west direction; is of oblong form, being about ninety-five miles in length, from north to south; and forty-eight from east to west. It is bounded, north by the two Kásh-kárs; south by Tál-ásh, and the Pes'háwar district; north-east by Bilauristán, Gilgitt, and other little known principalities towards the upper sources of the Indus; south-east by the Suwát valley; west by Káfiristán; and south-west by Báj-áwr, a district belonging to the Tar-kolání tribe of Afgháns. It is surrounded on all sides, and is crossed in various directions, by lofty hills, inclosing as many valleys through which the principal rivers flow, fed by numerous smaller mountain streams. The hills are clothed with dense forests of fir, pine, oak, wild olive, and other trees indigenous to these alpine regions.

The principal rivers, that intersect Panj-korah like the ramifications of a leaf, are, the Lahorí—also called the Dír river (rising on the southern face of the Lás-púr mountains separating it from Kásh-kár, and giving name to the pass leading into the latter country, the road winding along its banks) which flows nearly due south, passing the town of Dír, the residence of the ruler, for about twenty miles. It is then joined by the Tal from the north-east, which takes its rise in the hills bounding Yasin to the west. This stream has the longest course, and its Pus'hto name, signifying "always," "ever," "perpetually," etc., may refer to the fact of its never becoming dry, as some of the smaller rivers are liable to become in the winter months

The other streams in succession are, the U-sherí, whose volume is the most considerable of the Panj-korah rivers, and the Kárah, both of which run in an almost parallel direction to the Tal, with intervals of from twelve to twenty miles from each other; and the Biráh-wol from the north-west, whose source is in the lofty hills held by the Sí'áh-posh Káfirs, separating the valley of the Kásh-kár or Cheghán-sarác river from the Panj-korah district. All these (except the Biráh-wol) unite near the village of Rabát, and after flowing south for about another twenty miles, under the names of Panj-korah, Usherí, and Malízí river, receives the small rivers of Bába Kárah, Jandáwal, and Báj-áwr from the north-west, which, after watering the small valleys bearing those names, unite with the Biráh-wol river before they fall into the main stream in the district of Tálásh. About twenty-six miles further south, the Panj-korah river receives, near the village of Khwadarzí, the river of Suwát—the supposed Suastus of the ancients—a stream of great rapidity in many places, and of considerable length and volume—from the north-east. It rises in the hills bounding Gilgitt on the west, and runs, for some distance, nearly parallel to the other streams on the same side.* The united waters now become a clear, deep, and rapid river, known as the “Landdaey Sind,” in Pushto signifying “The Little” or “Lesser River” (in reference to the Indus, which is called the “Abá Sind,” or “Father of Rivers,” in this part of its course), which, lower down, near the village of Abá-zí, separates into several branches, which at Hasht-nagar, in the Do-ábah of the Pes'háwar district, again unite, and, at length, disembogue into the river of Kábul, near the village of Noh-satah, about forty-five miles from its junction with the Suwát. The Panj-korah or Landdaey river is supposed to be the Guraeus of the classical authors, and is the most considerable river of these regions after the Kábul.

The Panj-korah district slopes down considerably from north to south; hence the rapidity of the rivers, the main streams of which, in the summer months, increase so much in volume and rapidity on the melting of the snows, as to become impassable altogether, except by means of rafts, and even then, with considerable difficulty and danger. The Lahorí, or Dír, becomes dry in the winter months; and the other lesser rivers, or *khwarra*, as they are termed in the Afghán

* See my “Account of Suwát,” in the Journal for 1862, page 227, in which an account of the upper sources of the Suwát river will be found.

tongue, viz. the Biráhwol, the Tal, the Kárah, and the Bá-j-áwr river and its feeders, are generally fordable at that season.

The whole of these streams give names to as many *darahs*—long, narrow, fertile, and pleasant valleys, inclosed by ranges of lofty hills running in a parallel direction to each other, which are again intersected, in opposite directions, by hills less lofty, and valleys still smaller, each of which has its own little stream, acting as a feeder to the larger ones, and generally its village or small hamlet.

In the winter months, the hills are covered with snow half way down their sides; and in the valleys also, as far south as Dír, snow falls in considerable quantities, and lies on the ground for many days, and sometimes even, for weeks together. Lower down, they have copious showers of rain in the winter season.

The whole of these valleys, as well as the extensive level tract known as the "Sama'h," (except some parts of the latter, which approach the *Merra'h*, or Desert) are fertile, and the land is carefully cultivated. It produces an abundance of grain, chiefly wheat and barley; but *ju'ár* (*Holcus sorgum*), and *bájrú* (*Holcus spicatus*), are produced in smaller quantities.

The other principal productions are, cotton to a small extent, sufficient for home consumption; tobacco, and sugar-cane, which are grown in the more southerly parts. Most agricultural produce is exceedingly cheap, and is calculated to be eight times more so than at Kábul. When at the dearest, eight Kábul *sírs* of wheat—equal to about 88 lbs. English—sell for one *rupee* or two shillings.

Many European fruits are also produced in considerable quantities and some wild, but of no great variety. The former consist, chiefly, of apples, pears, and a sort of plum. The hills and valleys, in many places, are also clothed with several sorts of wild flowers, indigenous to these northern climates.

The land, in the more elevated parts, depends solely on rain for moisture; but in the valleys, the irrigation is artificial wherever the water of the numerous streams can be conducted. The chief harvest is the *khuríf* or autumn; and but little corn is sown in the spring months.

The northern part of Panj-korah, where the climate is severe, is somewhat thinly inhabited; but towards the south the country is densely populated.

The people, who depend chiefly upon tillage for subsistence, also possess numerous herds of cows and oxen, goats, and buffaloes. Sheep are met with in great numbers, and never reach a higher price than three *rupees*, or six shillings. Lately, I find, they have been brought to Pes'háwar for sale, in considerable numbers. A good buffalo can be purchased for from twelve to twenty *rupees*; but cows constitute their chief wealth. Loads are mostly carried on the backs of oxen and asses. Notwithstanding that fodder is abundant, horses and mules are by no means common; but some few of the former animals are kept for military purposes. Camels are seldom seen in the country.

One-tenth of the agricultural produce is received by the ruler. Cattle are not subject to any tax; but a capitation, or house tax is levied on each house at the yearly rate of three *rupees*.

The *rupee* in general currency throughout the country peopled by the Yúsufzís, is the old Herát coin, worth about twenty-five per cent less than the East India Company's *rupee*, which is also in circulation, since the annexation of the Panjáb, to a limited extent.

From the bounds of the village of Panj-korah to that of Ushíri, grain is sold by weight; but beyond, a measure, called *ao-ga'i* in Pus'hto, is used instead. The *sír* of Panj-korah is one-fifth less in weight than that of Kábul; and the *ao-ga'i* is equal to three quarters of the Panj-korah *sír*.

The present* prices for articles of general consumption are at the following rates:—Wheat, seven Panj-korah *sírs* the *rupee*; barley eight *sírs*; *sháli* or unhusked rice, eight *sírs*; *ju'ár*, seven *sírs*; salt, brought from Pes'háwar, six *sírs*; *rogan* or clarified butter, one *sír*; *gur*, coarse sugar, brought from Pes'háwar and Jelálábád, one *sír* and quarter; honey, one *sír* and a quarter; cotton, five-eighths of a *sír*—about eighteen ounces English; iron three *sírs*; *ká-dí*—the coarsest description of cotton cloth—eight Lam-ghán yards.

A few articles, the produce of Hindústán, are imported; but the chief imports, which consist of articles of apparel and clothing of various descriptions, and a little indigo, are brought from Pes'háwar by the traders of that city and district, numbers of whom visit the country, and take back in exchange, iron, honey, and *rogan* or clarified butter.

* This paper was written a few years since: the prices may have therefore altered, and allowance for any errors must be made accordingly.

There are a number of iron mines throughout Panj-korah, from which all the neighbouring countries are supplied. Some are situated in the Lás-púr mountains, and in the neighbouring hills of Biráh-wol, but the most extensive mines are in the Aw-shíri and Kárah *darahs*. In fact the whole of the Panj-korah district teems with iron and galena (called *surmah* or black antimony by the Afgháns), and there is no doubt but that it contains other even more valuable minerals.

Great quantities of yellow soap are made from the fat of sheep and goats, at the village of Gúna-ṭir, where all the houses, with but few exceptions, are provided with oil-presses and machines for boiling the soap, which sells at the rate of five *sirs* the rupee. This village supplies the whole of the surrounding hill countries with this necessary. It is held in great estimation as being free from adulteration with *jú'ar* flour and the like ; and is pure fat and potash.

There is a considerable trade carried on between the districts to the south-east and west, as well as with Badakhshán, Kásh-kár, Yárkand, and other places in Chinese Túrkestán, by menns of *káfilahs* or caravans. The route to the latter countries is through the Lahorí Pass, near the town of Dír, where the chief of Panj-korah resides ; and where he imposes a small tax or transit duty on merchandize. Travellers and traders are treated with great kindness and hospitality throughout the Panj-korah district ; and with the exception of the independent tribes of the S'áh-posh Káfirs (who are not subject to the ruler of Lower Kásh-kár) who, at times, infest the Lahorí Pass, the roads are safe, and the honesty of the people is so great, that the trader may generally penetrate into the remotest valleys, and in the hilly tracts, without danger of being molested by thieves or robbers.

The *darahs*, or valleys to the east of the main stream of the Panj-korah river, which divides the district from north to south, together with the names of the villages, clans occupying them, and names of their *Kad-khudás* or head-men, are as follow.

SHAKOLACY DARAH.

<i>Village.</i>	<i>Clan.</i>	<i>Chiefs or Head-men.</i>
Karah,	Sháhi-Khel,	Zardád Khán.
Deh Harún,	Sháhi-Khel,	Maesúm Khán.
Kot-ki,	Sháhi-Khel,	Hyder Khán.

<i>Village.</i>	<i>Clan.</i>	<i>Chiefs or Head-men.</i>
Karí,	Pá-indah-Khel,	Sæd-ullah Khán, brother of the Chief of Panj- korah.
Shakolaey,	Núrah-Khel,	Aiyúb Khán.
TÍMÚR-KALAH DARAH.		
Tímúr kalah,	Núrah-Khel,	Sirdár Khán.
Khún Koh,	" "	Mohsan, and Ghaffár.
Dán-wah,	Akhúnd Khel,	
Char-pírah,	Nasr-ud-Dín Khel,	Muhammad Khán.
Shahr,	" " "	Sarwar Mí-án.
Míán-mándah Sáhib-zádahs, or descendants of some holy man.		

RABÁT*-I-MUHAMMAD KHÁN DARAH.

Sám-rí,	Pá-indah Khel,	Gul Khán.
Rabát,	Nasr-ud-dín Khel,	Mahabbat Khán.
Kánj-lah,	Mí-án Khel,	Aká Sáhib.

KÁW-NÍ DARAH.

This *darah* contains only one village, named Dilkháh, but there is a number of small *bándahs* or hamlets, some of which do not contain more than a few families. This valley contains altogether about a thousand houses. The people are Pá-indah Khels, and the headman for the whole is nominated by Ghazan Khán, the chief of Panj-korah.

MALAH-KAND DARAH.

This *darah* is held by people of different clans. The hamlets are very small, and the whole *darah* may contain about eleven hundred houses.

TÚRMANG DARAH.

Akhkrám,	Pá-indah Khel,	Suyed Rahmán.
Dúd-bá,	" "	Sher Æalé Khán.

There are also several other smaller villages or hamlets containing a few families.

KÁBÚ DARAH.

This *darah* is inhabited chiefly by families descended from the original inhabitants of the country, who live in a state of vassalage to their Afghán conquerors. There are also a few Yúsufzís residing in it belonging to the clans already mentioned.

* Arabic for a caravansarác.

<i>Village.</i>	<i>Clan.</i>	<i>Chiefs or Head-men.</i>
NA-HÁK DARAH.		
Nahák,	Pá-indah Khel,	Chirágh Sháh.
Wáraey,	" "	Bázúe.
Izghánch,	Gudaey Khel,	Allah Yár Khán.
Dárojnah,	Sultán Khel,	Suyed Amír.
U-SHERÍ DARAH.		
U-sherí,	Sultán Khel,	Kází, Æabd-ur-Rahmán.
Jabar,	" "	" "
Kandí-kár,	Mí-án Khel,	Saiyid Adam.
Kázan,	" "	" "
Bíbi Yáwarah,	Pá-indah Khel,	Æabd-ullah Khán.
Mír Al-más,	" "	Zaríf Khán.
Tar-pah-tár,	" "	Hajúm Khán.
BAR (UPPER) U-SHERÍ DARAH.		
Bar U-sherí,	Pá-indah Khel,	Anwar Shúh Khán.
Damah-zár,	" "	Ahmad Khán.
Pálám,	" "	Fazal Sháh.
Sam-kott,	" "	Sher-i-Zamán.
Bátíl,	Mí-án Khel, or de-	Khair-ullah Mí-án.
Bar-kand,	scendants of	Karím Dád, a direct de-
	Akhúnd Darwe-	scendant of the celebrat-
	zah, and his family,	ed Akhúnd Darwezah,
		author of the Makhzan
		Pus'hto.*
Kor-koæy,	" "	} Mí-án Nazím.
Násht-ámál,	" "	
Habíbi.	" "	
Kamán-gar,	Núrah Khel,	Hasíb.

This last mentioned village derives its name, signifying, in the Persian language, "Bow-maker," from the fact of the first inhabitants having been makers of that weapon, for which their descendants are still celebrated.

ZARAH-KHEL DARAH.

This valley contains a number of small hamlets having but few inhabitants. The head-man is appointed by Ghazan Khán, the chief.

* For account of his writings, see my Pus'hto Grammar.

DRÁL DARAH.

This valley is very secluded, being inclosed on all sides by lofty hills ; and the hamlets are very small. The people pay a small tax to Ghazan Khán.

The following *darahs* and villages are situated to the west of the Panj-korah river.

HÁRÁNG DARAH.

This valley contains a number of small hamlets, many of which are now in ruins and deserted. The *zírat* or shrine of a saint, named Ghází Sáhíb, is situated in this *darah*.

SHÚH DARAH.

The river of Bájáwr, which rises in the hills to the west of Panj-korah, flows through this *darah* from west to east ; and after receiving the Jandáwul and Bába Kárah rivers, from the valleys bearing those names, joins the Biráhwol. The *darah* of Biráhwol, through which the last named river flows, before entering the *darah* of Shúh, lies higher up, and will be noticed in its proper place.

There are numerous small villages on both sides of the river, in this valley, the whole of which have numerous gardens and orchards. Ghazan Khán of Dir, the chief, appoints the head-man.

BÁHÁ KARAH DARAH.

This valley contains small hamlets only. The people were formerly independent, and were under a chief or head-man of their own, named Aslam Khán ; but several years since it became dependent on Ghazan Khán, who appoints a head-man of his own.

BIRÁHWOL DARAH.

The chief place in this valley is Biráhwol, hence its name, and that of its river. It is the residence of a petty independent chief, named Muhammad A'ali Khán, of the Afghán tribe of Tarkolání, which possesses Bájáwr ; and, therefore, although included in Panj-korah, it can scarcely be deemed a dependency of it, as the chief pays no tribute to Ghazan Khán. There are several iron mines in this valley, which have been worked for centuries past. There are also several hamlets, but they are small in size.

MAFDAN DARAH.

The only village of any size, contained in this *darah*, is Khemah, inhabited by Sháhi Khels, of whom Bárún is the head-man. There

re, however, numerous small hamlets. The people have the name of being the only robbers in the district of Panj-korah, which may be accounted for, in some measure, from the fact of this valley being the most difficult of access in the whole district.

PANJ-KORAH DARAH.

Bar (upper) Panj-korah,	Sultán Khel,	Sher Æalí.
Kúz (lower) Panj-korah,	„ „	Págul.
Pát-áw,	„ „	Mardán.

Dír, the residence of the chief.

Dír, the capital of the Panj-korah district, contains about two hundred houses, not including the citadel, and some twelve hundred inhabitants. It is protected by a considerable fortress or citadel, situated on a high mound or eminence, a spur from the Lás-púr mountains. The walls, which are substantially built of mud and stone, are about four hundred yards long, three hundred in breadth, and twelve yards in height; and are flanked by four towers or bastions. Within the citadel, which is kept in excellent repair, there is a large mosque, besides several other buildings, including the residence of the chief Ghazan Khán, and his numerous family, together with his immediate followers, constituting his standing army, the whole of whom, with their families, amount to about two thousand five hundred people.*

There are, in this, as in the other valleys, numerous small hamlets.

SHAMÚR-GAR DARAH.

Shamúr-gar,	Pá-indah Khel,	
Khír,	„ „	Allah Yár Khán.

Amlúk-nár, The people are the descendants of the aboriginal
Jabalak, inhabitants of the country, and called by the
Yúsufzís *raáyats* (vassals) and *fakírs* (villains).

The two smaller *darahs* of TAHÁNKÍ and DÚDBÁ are contiguous to this valley, and open into it. They contain a few hamlets.

The other chief places in the Panj-korah Darah, are Ghundí,† Chakyá-tan, Arottah Sín, and Panah-kút.

* BÁBAR calls this place Panj-korah, probably as it was the capital of the district. He notices it as follows. "Panj-korah lies a little above the middle of the slope of the hill. It is necessary, for nearly a *kos*, to climb up, laying hold of the ground." MEMOIRS, pp. 250.

† Signifying, in Pus'hto, a detached hill.

The chief *bázár*, or market towns, or marts of trade in the district are, Dír, Biráh-wol, Sam*-khál, and L'war†-khál.

There are three other *darahs* dependent on Dír, or the Panj-korah Darah, viz. KÁSH-KÁRÍ, so called from leading into Kásh-kár by the Láhorí Pass; DO-BUNDÍ, by the other Pass through which Kásh-kár may be reached in two stages; and KAHÍR. They all three contain some small hamlets at considerable distances from each other.

From the Maidan Darah towards the west, there is a route leading into Bájáwr†; and another from the Biráh-wol Darah, in the same direction. There are also two principal routes into Suwát from the Panj-korah district; one through the U-sherí, and the other through the Kárú Darah. Proceeding south from the villages of Tímúr-kalah and Kát-kalah, and passing through the small district of Tálásh (a short account of which will be found further on), the main road leads by Hashtnagar to Pes'háwar. It is good, and clear of obstruction, and is the only one by which guns could be taken into Panj-korah. Sultán Muhammad Khán, Búrakzi, the brother of Dost Muhammad Khán of Kábul (a person who is likely to cause us some trouble ere long, when the Dost shall have been gathered to his fathers), entered the Panj-korah district by this road, several times, whilst he was in possession of Pes'háwar.

Ghazan Khán of Panj-korah is the most powerful chief amongst the whole of the Yúsufzís, whether Yúsuf or Mandar; and by his great abilities and foresight, has rendered himself, for many years past, respected by all the other princes and chieftains of these parts. He is on friendly terms with the chief of Bájáwr†; and is in alliance with the rulers of Chitrál and Upper Kásh-kár. He is the son of Kásim Khán, mentioned by Elphinstone in his account of the kingdom of Kábul, son of Zafar Khán, son of Ghulam Khán, son of Akhúnd Ilyas; and belongs to, and is the chief of, the Pa-indah Khel branch of the Yúsufzí tribe, which is also known as the "*Akhúnd Kor*," signifying, in the Pus'hto language, "The Teacher's family or house." At the time these notes were made, three years since, Ghazan Khán was about seventy years of age, and has since probably died; but I have not heard of his decease.

The following tradition concerning the foundation of the family of

* Sam, level, flat.

† L'war†, high, lofty, etc.

Akhúnd Ilyás, who lived in the reign of the Mughal Emperor Aurangzeb, is related by the people of those parts :—Akhúnd Ilyás, a Darwesh and God-fearing man, was blessed with two sons—Aiyúb and Ismá'íl. The former who was the elder brother, had occasion, one day, to give some admonition to the younger, which the latter was not inclined to listen to in future, so he left the paternal roof in disgust, and proceeded to Kábul ; and although of tender years only, he succeeded in obtaining service with the Governor of that province. Here his cleverness and great talents attracted his master's notice ; and he was advanced from one post to another, until, such was the confidence placed in him, he was admitted within the Haram-sarác,—the most private apartments.

One day, the Governor, who appears to have been, himself, under petticoat-government, had a dispute with his wife, which ended in her beating the ruler of the province with one of her slippers. Aiyúb happened to be present on that occasion ; and it tended, in no small degree, to add to the shame of his master, consequent on such an exposure. In order to comfort the Governor, if possible, and soothe his irritated feelings, Aiyúb remarked, that the women of all countries are naturally violent in temper, as well as tyrannical in disposition ; and, that in his own country they were more violent still, and had even been known to take the lives of their husbands. He therefore begged his master to take no further notice of his wife's behaviour, but to serve her after the same fashion in future, should she indulge in such fits of violence.

After this untoward occurrence, however, the Governor, fearing, no doubt, lest the matter might leak out, and that he should, consequently, become a laughing-stock amongst the people, took care to treat Aiyúb with great consideration, and never to be angry with him ; in fact, he let him have his own way entirely. He accordingly rose in his master's favour more than ever, particularly when, after inquiries, he found that Aiyúb had faithfully kept his secret.

Aiyúb at length became desirous of revisiting his home and friends ; and he was dismissed by the Governor of Kábul, with great honour, and loaded with presents, both in money and goods.

There being no mechanics or artizans in his own country, Aiyúb obtained permission from the Governor to take along with him from Kábul, a carpenter, a mason, a goldsmith, and a huntsman, together

with their families, who settled in Panj-korah. Their children followed the occupations of their fathers, and their descendants are now a considerable community, much respected in the country. These people are known as *fakírs*, a name also borne by the aboriginals of those parts, subject to the Yúsufzí Afghans.

Aiyúb was also attended by a number of other followers; and shortly after he reached home, Akhúnd Ilyás, his father, who was still alive, called his two sons into his presence and said unto them: "Out of the goods of this world, I have but two things to bequeath—my sword, and my *kachkol*" (a wooden bowl, or a gourd, in which a Darwesh receives alms): "take your choice of them." Ismáwíl, the elder brother, chose the *kachkol*, and Aiyúb the sword; and soon after, Akhúnd Ilyás, who had attained a great age, was gathered to his fathers. The children of Ismáwíl practise austerity; and are seekers after "the truth"* unto this day. They have the credit of being very learned. Aiyúb, who kept up a small number of soldiers, at length, obtained the title of Khán amongst his countrymen, and acquired considerable power, which increased from generation to generation, up to the time of Kásim Khán, father of Ghazan Khán, the present chief, whose rule extended over twelve thousand families of the Yúsufzí tribe.

Kásim Khán was the father of three sons—Azád, Ghazan, and Saeed-ullah—by three several Yúsufzí mothers, each of different clans. Azád, the eldest, by some untoward and unfortunate chance, became the slayer of his father; and some time subsequently, was, in like manner, slain by the youngest brother Saeed-ullah, in retaliation. These events occurred during the short and stormy reign of Sháh Mahmúd, (son of Tímúr Sháh, and consequently brother of the unfortunates, Sháh-i-Zamán and Sháh Shújáze-ul-mulk), over the kingdom of Kábul, about the commencement of the present century.

Ghazan Khán was possessed of prudence and foresight in no small degree. He also had great wealth; and succeeded, by degrees, in gaining over the people to his side; and with the support and assistance of the late Sháh Kaṭor of Chitrál, or Lower Kásh-kár, he was acknowledged as the chief of his tribe, and ruler of the whole country of Panj-korah. The former friendship with the late, has been continued with the present, ruler of Chitrál—Tajammul Sháh, son of Sháh Kaṭor. Ghazan Khán, however, is at enmity with his younger

* Súfí-ism: see my "SELECTIONS FROM THE POETRY OF THE AFGHÁNS."

brother Sa'ed-ullah, who still continues at the head of some four thousand families. In the month of *Muharram*, in the year 1839, during our occupation of Afghánistán, some cause of dispute having arisen between them, they assembled their followers, and Ghazan Khán advanced against his brother; but the forces separated after a slight skirmish, in which from twenty to thirty of their people were killed and wounded.

The Panj-korah chieftain was on friendly terms with the late Government of Lahore, during the time of Mahárájá Ranjít and Mahárájá Sher Singh; and they were in the frequent habit of sending presents to each other. In 1839, when it was the policy of the late Ranjít Singh to conciliate the Panj-korah chief, he sent him amongst other valuable presents, a fine elephant; in return for which Ghazan Khán sent the Mahárájá several fine Kohistání horses, and some other rarities, through Sultán Muhammad Khán, Báarakzí, who then held Pes'háwar of the Seikh ruler. During the time that the Neapolitan Avitabile was Governor of Pes'háwar for the Lahore Government, the chief of Panj-korah used to send him Chitrál slave-girls for his seraglio, besides male slaves, from the hill countries in his neighbourhood.

The regular paid troops of Ghazan Khán do not exceed two hundred men; but the *Ulúsi* or militia, or feudal retainers, amount to above ten thousand matchlock men; and they can be assembled on very short warning.

The chief subordinates of Ghazan Khán, or his ministers as they are termed, are, his son Ráhmát-ullah Khán, Suyed Mír 'Alám, Kází 'Abd-ur-Rahmán, of the Pá-indah Khel, and 'Abd-ul-Kádir, who was formerly a slave, but has now become the Názir of income and expenditure.

It now remains to say a few words respecting the *Ra'ayats* or *Fakirs*, who are much more numerous than the Yúsufzís themselves. The greater part of them are the descendants of the aboriginal inhabitants whom the Afgháns found there when they conquered those parts at the end of the and beginning of the fifteenth century. They are also called Suwátís, and Degáns; and are, with the Shalmánís and other tribes, such as Hindkís, Awáns, Paránehahs and others, the original people of these parts. It is strange that those who say so much about Herodotus, and the *Πάκρves*, who they contend are the

Afgháns, do not first provide for these people, who were in those countries when the Afgháns conquered them, and had been there centuries previously. As I said before, the greater part of those people, now to be found in the country held by the Yúsufzís, are called Suwátís, and are the descendants of those who remained in their country* after it was conquered; a goodly number of Degáns; some Hindkís, who have emigrated from the Panjáb; a few Kashmírís, and Hindús, who are attracted by the desire of gain; and some members of other Afghán tribes who have been obliged to fly from their own people, and who thereby have become degraded to the rank of the *Fakírs* and *Raáyats*. The *Fakírs* cannot hold land, and are not considered equal to their conquerors, who live like Spartans among Helots; and they are not allowed to be present at *Jirgahs* or assemblies of the clans. They are subject to the person on whose land they dwell, who is styled the *Kháwind* or master. They pay him a small tax and are obliged to work for him gratis, for certain periods, like the *villains* in our own country in days gone by. The master can beat, or even take the life of his *Raáyats* or *Fakírs*, without being questioned for it. But, at the same time, they are sure of every protection from their *Kháwind*, who would not, at the risk of his life, permit any other person to injure them. They may pursue any trade, work as labourers for their own advantage, or rent land as a *Bazgar*, and their master would have no demand upon them but for the fixed rent, a few taxes, and a certain share of their labour, as already mentioned; and, altogether, they are mildly treated. The *Kháwind* is deterred from ill-treating his *Fakírs* from the disgrace attached to oppression by the Yúsufzís, as well as the other Afghán tribes; and, moreover, a *Fakír* or *Raayat*, if oppressed can remove to the lands of another Afghán, who would gladly receive, and give him protection, for there is a great competition for them. The number of clans and independent communities among the Afgháns are a great protection to these people; and should one of them receive any deadly injury requiring retaliation, he could revenge himself on his oppressor, and afterwards fly to another clan, or independent community, and demand protection, which would always be freely granted.

The *Kháwind* is not permitted to extort money from his *Fakír*; but he is allowed to levy a few fines, such as, on the settlement of a

* I shall return to the subject of the Suwátís in a future paper.

Eakir upon his land, on a marriage among them, and on account of crimes, both of minor and more serious consequence. The amount of these fines are fixed by custom, and any attempt to extort more would be considered gross oppression. They are not forbidden to carry arms, but rarely do so.

Most of these people work as husbandmen, but some feed heros or cattle on the mountains, and some amass money by the profits of their labours as artizans; for an Afghán considers any handicraft trade a disgrace.

TÁLÁSH.

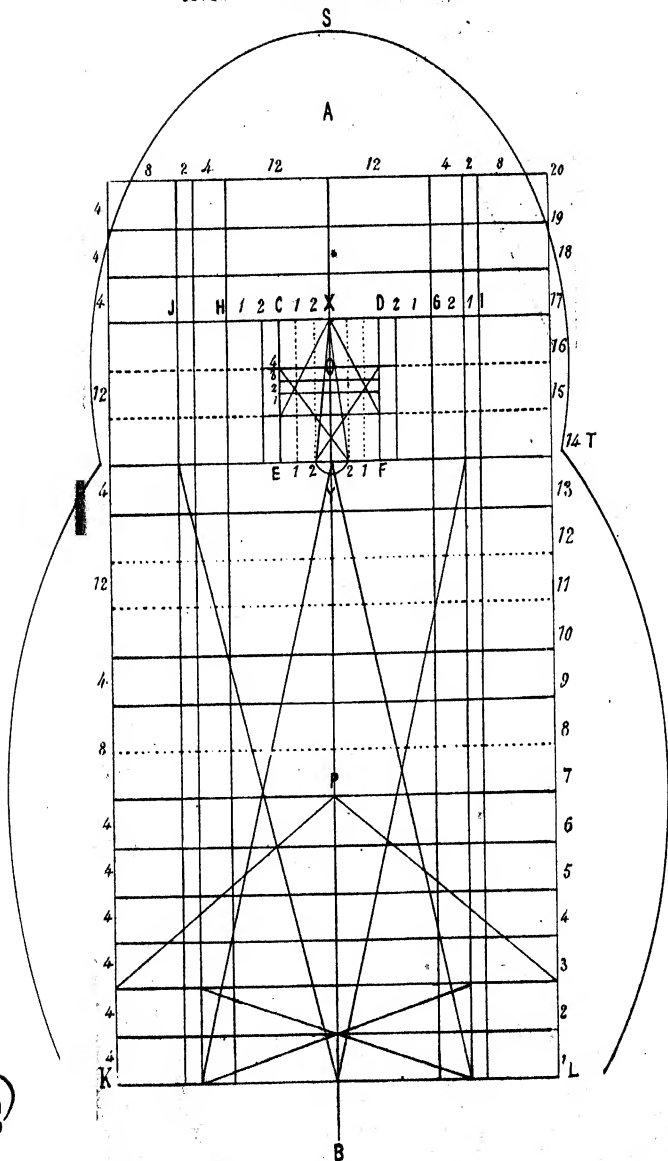
Before bringing this paper to a close, I must give some account of the small district of Tálásh, which is also held by the Yúsufzís, and is considered as a part of Panj-korah, of which it forms the southern portion. It consists of the oblong strip of land through which the river of Panj-korah flows, after its junction with the river of Báj-áwr, as far as its junction with the Suwát. It is consequently bounded on the west by Báj-áwr, and to the south by the hills held by the Utmán Khel, an independent tribe of Afgháns. Tálásh is well watered, and is, therefore, exceedingly fruitful, well cultivated, and very populous for its extent. It exports a good deal of grain to Pes'háwar, the main road between which, and Panj-korah, Badakhshán, and the two Kásh-káras, lies through it.

The chief towns, or large villages of Tálásh, with the names of the clans to which their inhabitants belong, and their head-men, are as follow.

<i>Village or Town.</i>	<i>Clan.</i>	<i>Chief or Head-man.</i>
Bágh,	Sháhi Khel,	Ghulám Sháh.
Shamsí Khán,	" "	Afzal Khán.
Kambatta'í,	" "	" "
Amlók Darah,	Baeyats or Fakírs,	
Mucho,	Núrah Khel,	Ghazan Khán.
Bájorú,	{ Sháhi Khel and	Sher Sháh, and
	{ Núrah Khel,	Afzal Khán.

The village of Kamán-gar, the people of which are bow-makers by trade—hence the name of their village—is, sometimes, considered as belonging to the Tálásh district, but it is, properly speaking, in the U-sherí Darah of Panj-korah. It has been, therefore, mentioned among the villages of the Bar (upper) U-sherí Darah, already noticed.

OUTLINE PREPARED for DRAWING FIGURE:



LITHOG BY H.M. SMITH, SURV. GENL'S OFFICE, CALCUTTA, APRIL, 1864.

a point of some interest with reference to the evidence of former land surfaces which the section has disclosed.

Sealdah, Calcutta.

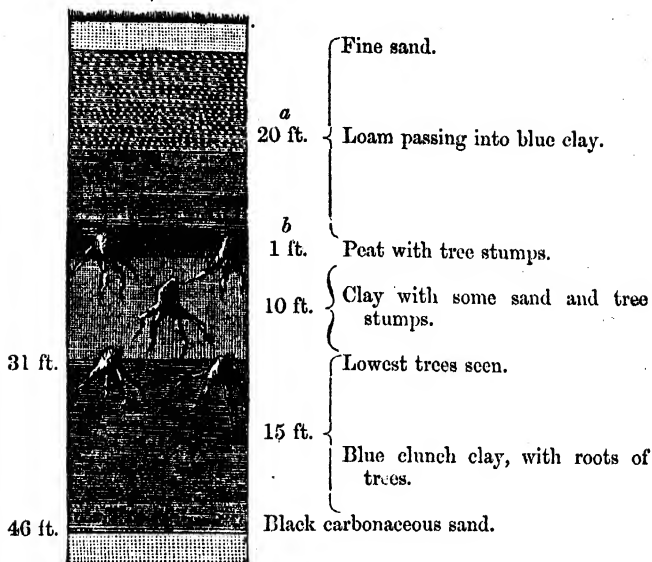


Fig. 1.

The section is illustrated in the accompanying wood cut, Fig. 1. The upper 3 feet (more or less) consists of vegetable mould and made earth, and rests on the irregular surface of bed *a*, the upper part of which consists of fine loam, much like the soil of paddy fields, but variable in different parts of the excavation. Thus in some places it consists of fine sandy silt, minutely laminated, and crumbling under the slightest pressure: elsewhere it is more argillaceous, and in general it is very full of fragmentary vegetable remains, too imperfect however to be recognised specifically. This bed becomes more argillaceous towards the lower part and near the base is a tolerably tenacious clay. Its total thickness averages 17 feet, the bottom being at 20 feet below the actual surface.

Bed *b*, is 1 foot in thickness, and consists of an impure peat, too earthy to burn, when dry. In it several stumps of Sundri trees are standing, the roots penetrating the bed immediately below. This bed is continuous all round the tank, and appears to extend every-

where beneath Calcutta, and also on the Howrah side of the river,* although its depth is not everywhere uniform. Thus it is exposed in the bed of the river below Garden Reach, (at very low tides,) and also in the river bank at the Botanic Gardens. At these places its absolute depth is about 6 feet less than at Sealdah. In three borings in Fort William, on the other hand, it was met with at a depth of 51 feet, which, allowing for a difference of 3 feet between the actual surface levels of the Fort and Sealdah, would indicate a level 28 feet lower than that at Sealdah, and not less than 34 feet lower than at the Botanic Gardens. The correspondence of this part of the two sections is however such, that notwithstanding this great difference in level I cannot but think that the bed is either continuous or approximately so.

The peat bed rests upon a thick deposit of clay, *c*, sandy in the upper part, but passing downwards into a stiff blue clunch, which contains the stools of Sundri trees in situ at various levels, at least as far down as 30 feet from the surface, or 10 feet below the peat. Two very perfect specimens of these projected from the bottom of the tank at the time of my visit. Their roots penetrated the clay beneath, and I saw in the sides of a little well which had been sunk 4 feet lower, that the clay beneath was pierced in every direction by the roots of similar trees. These trees must therefore have grown at a level actually $15\frac{1}{2}$ feet below the lowest water level of the canal, and 13 feet below that of the Hoogly.

No deeper excavation was open at the time of my visit, but I was informed by Mr. Leonard, that a deeper well sunk in the bed of the tank and subsequently filled up, had shewn that the clay bed extended to a depth of 15 feet below the tank bottom, and rested on a stratum of very loose black sand, fetid from the amount of vegetable matter which it contained. According to this, the total thickness of the bed is 25 feet below the peat, which corresponds very closely to that of the fort section, where the peat bed rests upon blue clay with *wood* and *kunkur*, and yellow clay, of a total thickness of 21 to 24 feet; and this on a stratum of wet reddish sand.

The point of chief interest in the Sealdah section is the occurrence of tree stumps in situ at the depth of 30 feet, and the evidence

* I am informed by Dr. Anderson, that the natives have a tradition to the effect that the Hooghly formerly passed from Cossipore some miles to the West of Howrah, its present course being that of an old native canal, into which the river burst its way about 150 years since, deserting its old channel. Thus the beds on the two banks of the actual river were formerly continuous.

There are numerous small hamlets in Tálásh, inhabited by people of the Núrah Khel, who constitute the most considerable number of its inhabitants.

The district of Tálásh is very rich in monuments of antiquity, consisting of domes or cupolas, on the face of one of which, I am informed, there are several tablets, half a yard long, and inscribed in an unknown character, said to be Yúnání or Greek, but probably Pálí. If Greek, the examination of these ancient monuments would, no doubt, throw an extensive, and clearer, light on the proceedings of the Greeks in these quarters, which are so mixed up with nonsensical fables, as to furnish ready tools in the hands of those ignorant of the antecedents of the Afghán nation, for working out their own theories.

On the System employed in Outlining the Figures of Deities and other Religious Drawings, as practised in Ladak, Zaskar, &c.

(Communicated by Capt. H. H. GODWIN AUSTEN, F. R. G. S., 2nd Assist. G. T. Survey of India.)

As I believe no notice has hitherto been taken of the above subject, and as I only accidentally discovered its existence when in Zaskar last summer (1862) I have been led to write a few lines regarding it; trusting that they may prove of interest to some, and add to our knowledge of the history and customs connected with the ancient religion of the Buddhists. I do not claim any new discovery in this paper, as others may have observed the method of drawing long since. It has a resemblance to that adopted by ourselves in teaching Figure Drawing, and it was when shewing this to a native draftsman of Shilar, a village near Padum, that he produced a sketch of a figure outlined as shewn in the accompanying plates, as also that of the "Churtun" or "Offertory Temple."

The system of the first shews a great amount of ingenuity in its details, but is far more intricate than our simple way, where more is left to the talent of the artist.

The Deity thus given as a specimen is Sakya Thubba, or Bhuddha.

The first line laid down is the perpendicular AB, to which a line (No. 20) is drawn at right angles, and on either side of AB on this line are laid off from a scale proportions equal to 12, 4, 2, 8, and lines parallel to AB drawn through these points. On the two outer line

commencing at the 20th, parts equal to 4, 4, 4, 12, 4, 12, 4, 8, 4, 4, 4, 4, 4, 4, are laid off in the above succession, and the points connected by lines which will be all parallel to the 1st (No. 20). The square for the face is similarly formed by laying off from the same scale parts 6 and 2 on either side of X, the outer part 2 delineating the breadth of ears, and a part equal to 2 laid off on either side of Y defines that of the nose and mouth by lines drawn to X from those points.

The mouth is placed half-way between 14 and 15, and its width, as well as that of the nose, is defined by the lines XE_2 and XF_2 . The arc of a circle described with a radius from centre of mouth to E_2 or F_2 defines the chin. The part between the lines 15 and 16 within the square DCEF is divided into four parts by horizontal lines, the lowest part (1) gives marking of nostrils, the third defines the eyes, the outer and inner corners of which are determined by lines drawn as in the accompanying plan.

The eye-brows lie on 16, as also the top of the ear, the long lobe of which reaches to 14 on a level with the chin. A curve from H_2 G_2 rising to 18 defines the crown of the head; the circular glory RST round which is described from O as a centre, between the eye-brows. A second glory (as it may be termed,) RK and LT is described round the body from the point P on line 7. These glories are in the paintings coloured differently. Lines from the intersection of I and 14, J and 14 to B form a triangle, and on 4, 5, 6 give the sides of the alms dish, resting on the palm of the left hand. Another triangle being made with its angles at Y and the points on the line KL where the perpendiculars through J and I intersect it, the nipples of the breast lie on its two sides where they are intersected by line 10. A third triangle, apex at AB_{17} to L_3 K_3 gives the slope of the thighs in a sitting posture, while again lines I_3 to J on KL, and J_3 to I on KL give direction of shin and instep to points of the great toes. On reference to the plates it will be seen that many other parts of the body are made to fall on the intersections of the different lines.

These figures are seen in every monastery painted on both canvass and silk, the latter being generally brought from Llassa; they are often remarkable both for their richness of colouring and sharpness of outline. Many similar figures scratched on flat stones are put as offerings on the Mani Walls and are to be seen all over the country, more especially in Zaskar.



Facsimile of a

SAKYA THUBPA

draw

PLAN
from native drawing of
CHOORTUN,
from ZASKAR LADAKH.

*Tok
 Nima
 Darwa
 Thaco
 Thosdkeb

Chuksam Kolor

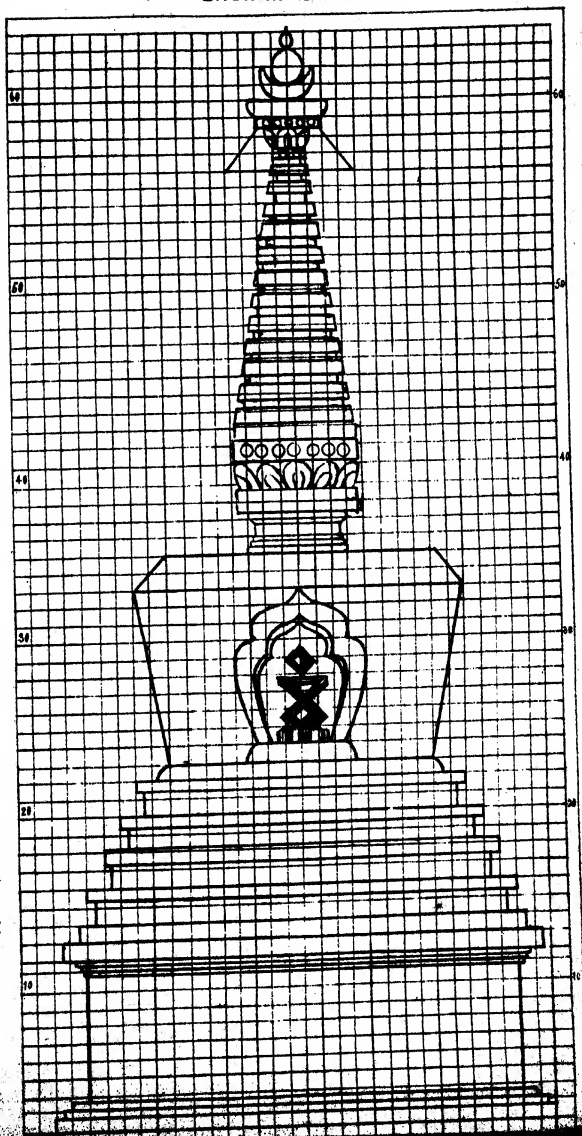
Diaput

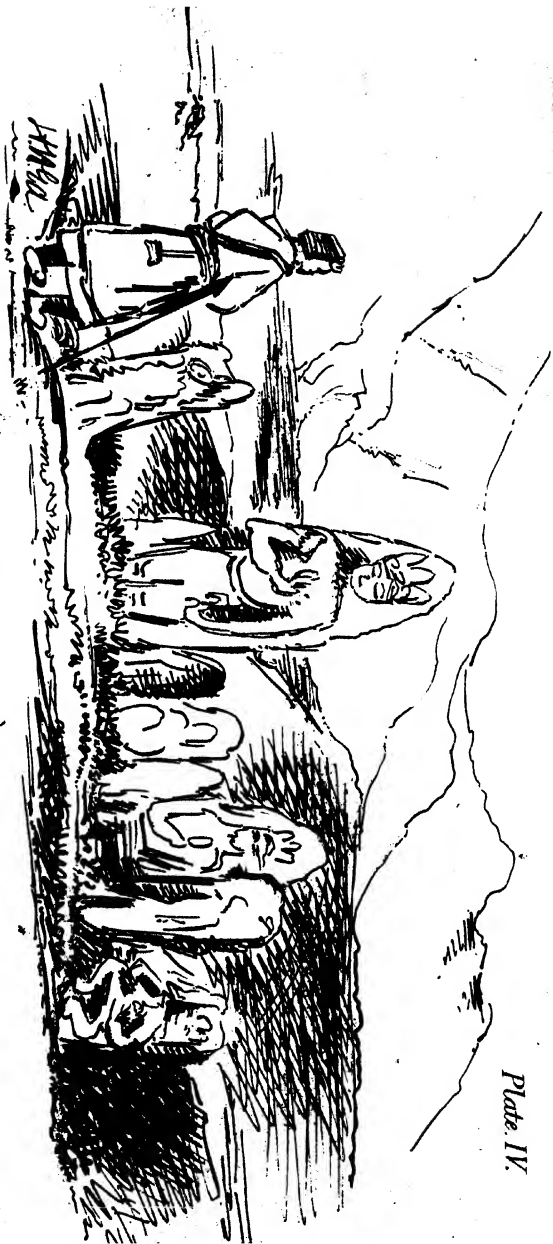
Thi

Peompah

Baring

Chakra





OLD STONE FIGURES, DÈKOO near PADUM.
ZASKAR.

LITHOG. BY H.M. SMITH, SURV. GEN'L'S OFFICE, CALCUTTA, APRIL, 1864.

The similarity of their proportions and cast of countenances is striking, and must be attributable to the above described mechanical mode of laying out the figure, which may probably be used all over Thibet.

I was unable to obtain copies of their many other deities, such as Chamba, Chandazik Grolma, (female), Chooshong, &c., but I imagine there is a like rule for drawing each; I shall try and obtain further information regarding them next season.

The drawing of the Chürtún (Pl. III.) which I send is also taken from a native plan on which the measurements are given. I have entered the names of the different parts, which I find are not given in Cunningham's work on Ladak. The part called 'Chuksum' or 'Chugsum Kolor' always has, as its name implies, 13 discs, Chugsum meaning thirteen;—there is perhaps some reason for it, for when I shewed Cunningham's XXVIIIth Plate of a churtun to the Lhamas, they at once counted the number of discs and informed me that three had been left out. The letter in the centre is the syllable "Hun" which is brought into all the mantras repeated by the people.

These Churtuns are picturesque buildings, and reminded me much of the Pagodas in Burnah on a small scale, for in Ladak they are rarely over 40 feet in height, and are generally very much smaller. The sides of the lower portion are often adorned by cleverly modelled work in relief, representing some imaginary animal, between a man and bird, or a sort of griffin, with a border of scroll-work. The upper portion, "Thoodkeb," in the better kind of churtun is made of metal, and I was told that in former times gilt churtuns were to be met with in the neighbourhood of the large monasteries or Gonpals. The churtun close under the palace at Leh is a good specimen and its name "Stunzin Num-gyal" is well known all over Ladak, so much so that a song has been written about it. At the monastery of Himis there is also a very pretty model, coloured white and ornamented with good gilt scroll-work, and inlaid with rough turquoises, carbuncles, agates, &c. There are a few more good ones in the same neighbourhood, but during the Dogra conquest of the country, many of the best religious buildings were destroyed, or more or less injured.

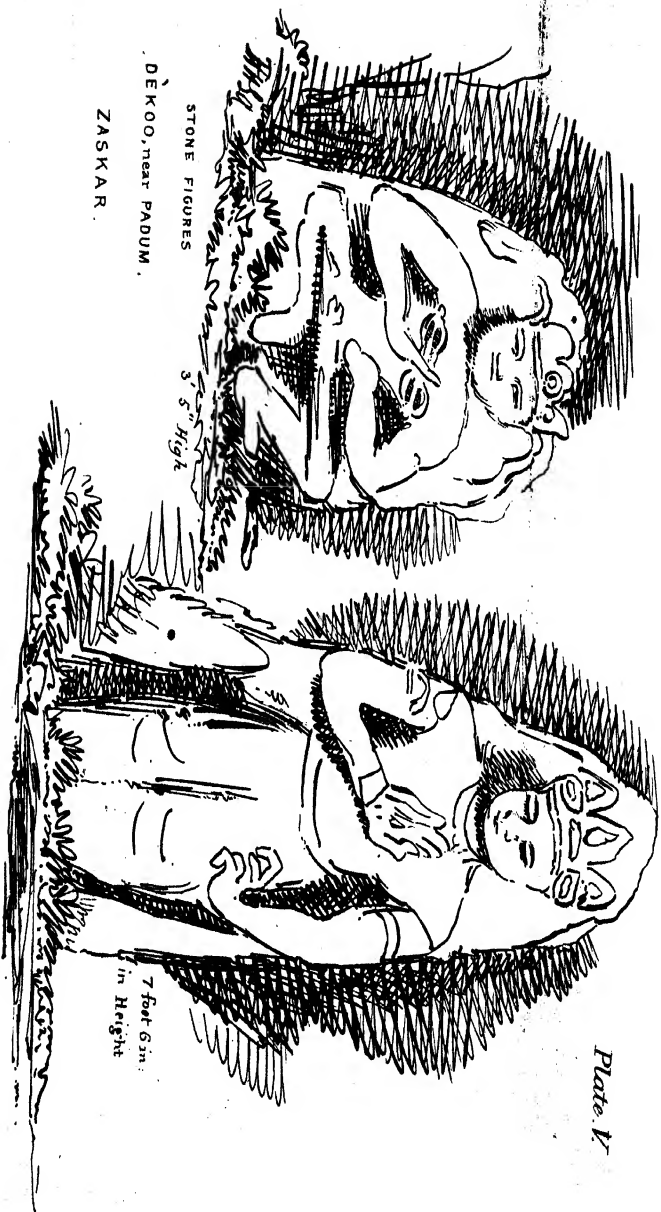
When surveying in the neighbourhood of Padum in Zaskar, I discovered in a field near the monastery of Sèni, several stone figures as shewn in the accompanying rough sketch (Pl. IV.) They had been set

up on a slight curve, and the highest standing in the centre was about $7\frac{1}{2}$ ft. high. Several had evidently disappeared, and with the exception of the two given on a larger scale (Pl. V.) they were very much worn and the features quite obliterated. I could obtain no information at the time as to what they were called. The Lhama with me from the monastery close by, called them Dekoo, said they were very very old and that no one knew who had made them. The head-dress was peculiar, nor have I seen it worn by any in that country at the present day. The smaller figure holds the Dorgè or Sceptre, which points out that they are of Buddhist origin. They are probably very early, dating from when that religion was first introduced into Zaskar; the rudeness and bad proportion of the figures display the handiwork of a people far behind the present race, who to all their drawings and modellings give a finish and exactness not usual even in the plains of India. I could discover no signs whatever of any inscription having been cut on either of the images,—the very worn state of the stone must have obliterated it, had there ever been any. Their age I must leave to be settled by those who are versed in the history of the early Bhuddists; and who may have noticed the curious ends projecting on either side of the head in other sculptures of the same period.

Note on a tank Section at Sealdah, Calcutta.—By H. F. BLANFORD,
A. R. S. M., F. G. S.

I am indebted to Mr. H. Leonard the Government Superintending Engineer, and a member of this Society, for drawing my attention to a section exposed in the large tank now in course of excavation at Sealdah, and which seems to me of sufficient interest to be recorded in the pages of the Society's Journal. The tank is situated to the East of the Circular Road, between the termini of the Eastern Bengal and Mutlah Railways, and has been excavated to a depth of 30 feet below the normal surface of the ground, which is at that spot $14\frac{1}{2}$ feet above the level of the low spring tides in the neighbouring canal, and 17 feet above that of the lowest spring tides of the dry season in the Hoogly river.* The bottom of the tank is therefore $15\frac{1}{2}$ feet below the former, and 13 feet below the latter level,

* These levels are quoted from those given in the Report of the Municipal Engineer on the Main Drainage of Calcutta.



STONE FIGURES
DEKOO, near PADUM.
ZASKAR.

afforded thereby of a general depression of the delta.* The trees in question, specimens of which I submitted to Dr. Anderson, were pronounced by him to be Sundri, a species, the range of which, as regards level, is restricted to from 2 to about 10 feet below high water mark. It grows only on mud, or where the surface is too frequently flooded to allow of the growth of grass, but at the same time it requires that its roots be exposed to the air for at least several hours of each tide. It is evident therefore that the trees at Sealdah could not have grown at the level at which they are now found, but that unless low water level in the Hoogly be 18 or 20 feet above that of the outer Soonderbuns, (where the Sundri now grows,) there must have been a depression of the land surface to a depth of several feet since they grew. I have not been able to obtain any data showing the relative low-water levels of the Hoogly and the outer Soonderbuns,† but Mr. Leonard informs me that there is but very little difference between the levels of the Hoogly and the Mutlah at Canning town, and this is not many miles above the actual geographical range of the Sundri, while the channel is so broad and deep as to forbid the assumption that there should be any material elevation of the low tide level of the former.

I think therefore we may safely infer, remembering the range of the Sundri, and that it never grows to within 6 or 8 feet of the lowest tide levels, that there must have been a depression of land to not less than 18 or 20 feet, since the trees grew, the stumps of which are now found at the bottom of the Sealdah tank.

If at the Fort, the wood found above and below the peat bed be, in situ, as I think most probable, there must have been a depression at this spot to a depth of not less than 46 to 48 feet; but whether the two land surfaces thus indicated were contemporaneous, and the relative depression, consequently, unequal to the extent indicated by these figures, the evidence before us, is I think, insufficient to establish.

* Or rather, additional evidence, for several proofs of subsidence were afforded by the section of the Fort boring.

† Since the above paper was read before the Society, I have obtained from Col. Gastrell and subsequently from Major Walker's Report of the operations of the G. T. Survey the accurate height of the sea level at Kidjiri with reference to Calcutta.

The mean height of sea level above the Calcutta datum line of Kydd's dock sill is 9,053 feet: the mean height of neap low tide levels above the same datum line, 5,51 feet. The height of the ground surface at Sealdah above the datum line is 22 feet, and therefore 16,49 feet above low tide level at Kidjiri.

Hence the tree stems at the bottom of the Sealdah tank are $(30-16,49)=13,51$ feet below the mean level of neap low tides.

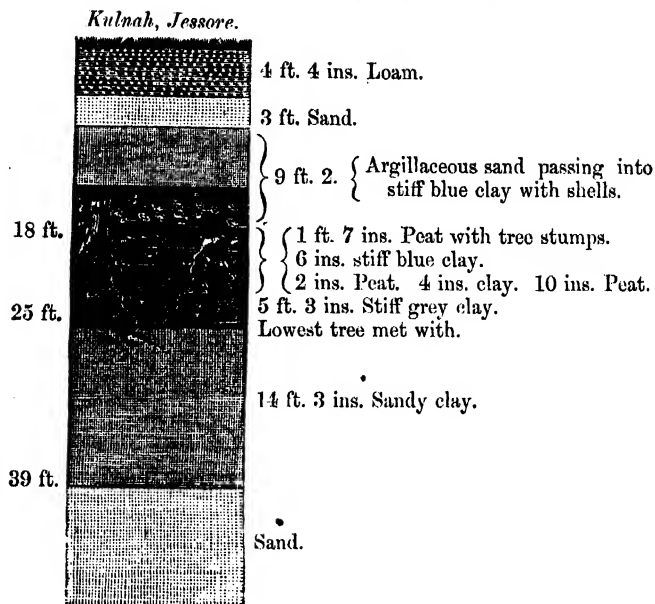


Fig. 2.

The depression was I think very extensive, if unequal; thus I am informed by Mr. Leonard that the peat bed occurs at a depth of 20 feet at Canning town on the Mutlah, the actual land level of which place is certainly several feet below that of Sealdah, and a section of a tank near Khulnah in Jessore, for which I am indebted to the kindness of Col. Gastrell, shews a peat bed at a depth of 16 ft. 6 ins. to 20 feet, and trunks of trees with roots attached at various levels from 18 to 24 feet. This very interesting section is shewn in the accompanying wood cut, Fig. 2.

From these facts, I infer an average depression of the Gangetic delta of 18 or 20 feet since the land surface existed, which is marked by the Sundri trees in situ. It is noteworthy that the trees, in all the sections I am acquainted with, are restricted to a vertical thickness of from 8 to 10 feet, and that the strata above, though frequently full of fragmentary plant remains and sometimes fresh water shells, shew no indications of former land surfaces. This indicates not only the uniformity of the depression, but also that it was everywhere more rapid than would be compensated for by the deposition of sediment.

*Memorandum on the life-sized Statues lately exhumed inside the Palace of Delhi.—By C. CAMPBELL, Esq., C. E.**Delhi, June 5th, 1863.*

1. We have now collected together and sorted all the fragments, and find that they comprise, apparently, portions of no less than 3 groups, all imperfect, as follows.

Elephants	Feet,	11	fragments.
„	Legs,	18	Ditto.
„	Trunk,	21	Ditto.
„	Head,	4	Ditto.
„	Body and	} 63	Ditto.
„	Howdah,		

And in addition several hundred fragments that cannot now be identified.

Of human figures, there are 3 portions of a body, 4 fragments of arms, and one complete head.

These are in a very rude style of art; one of the hands is comparatively perfect and has the thumb on the exterior, *i. e.* where the little finger ought to be, and vice versâ. An attempt has been made at some former period to repair these groups; this is evident from many of the fractures having been cut square, and new pieces of stone fitted in, whilst from the fact of these new pieces having remained uncarved, it is clear that the attempt was soon abandoned.

2. There can be no doubt that these are the identical figures seen and described by Bernier, who visited Delhi at the commencement of Aurungzebe's reign. His description is as follows.

“The entrance of the fortress (palace) presents nothing remarkable besides two large elephants of stone, placed at either side of one of the principal gates: on one of the elephants is seated the statue of Jemel, the renowned Rajah of Chittore; on the other is the statue of Polta his brother. These are the brave heroes, who, with their still braver mother, immortalized their names by the extraordinary resistance which they opposed to the celebrated Akbar; who defended the towers besieged by that great Emperor with unshaken resolution; and who, at length reduced to extremity, devoted themselves to their country, and chose rather to perish with their mother in sallies

against the enemy, than submit to an insolent invader. It is owing to this extraordinary devotion on their part, that their enemies have thought them deserving of the statues here erected to their memory. These two large elephants, mounted by the two heroes, have an air of grandeur, and inspire me with an awe and respect which I cannot describe."

Of their removal from this position nothing is known; from the state of the remains it was evidently attended with violence, and is probably therefore due to the iconoclastic tendencies shewn by Aurungzebe, in the latter part of his life. The attempt at restoration would be made during the reign of one of his successors, when it may have been proposed to complete the group, by the addition of a third elephant, bearing the effigy of the heroic mother of the two Hindoo princes.

On the abandonment of the design, the fragments would be left to lie neglected and uncared for; many would be stolen or employed in the decoration of new buildings, until what was left was buried in the ruins of the house where they lay, and from the debris of which they have just been recovered.

3. The question now arises; are the statues lately exhumed the same as those described by General Cunningham as existing at Gwalior? That they are independent works by Mahommadan artists is very unlikely, although it is of course *possible* that they may have been made by order of the Emperor Shah Jehan when the new city and palace were designed by him; but why, in this case, should the effigies of princes of a hostile race and faith have been selected as subjects? and how account for the absence of any mention of them in the records that have descended to us? It is much more probable that they were the work of Hindoo artists, brought from a conquered city for the adornment of the new palace of Shah Jehan; if so, did they come from Chittore? I think not, for, had they existed there for any time, they must have been as well known as the Gwalior ones, which does not seem to have been the case.

4. It must be borne in mind that they are not *statuary portraits* like those executed by European artists, but mere effigies like "Gog and Magog" in the London Guildhall, and they probably bore as much resemblance to Jemel and Polta as to Maun Sing, or any other Hindoo chief.—Bernier's statement is no proof of their being actually

meant as likenesses of the two brothers, and merely shows that at the time of his visit, they were popularly known by general repute as representing the two Chittore princes, but leaves untouched the assumption that they may have been in existence for centuries, may have been known at Gwalior as memorials of the popular hero there,—Raja Maun Sing—and on their removal to Delhi, may have been re-named by Shah Jehan, in memory of some incident in his early youth, connected with the fall of Chittore.

5. In his memorandum, General Cunningham has shewn that the art of sculpture had long flourished at Gwalior, and that more than one statue of a life-size existed there. Of the most famous of these, he has traced the history down to the reign of Shah Jehan, and proves that it had disappeared from Gwalior in the next reign. Its disappearance he connects with the iconoclasm of Aurungzebe, but if that Emperor destroyed it at *Gwalior*, how came the fragments to find their way to *Delhi*? Their removal must have occurred during the troubled reigns of the successors of Aurungzebe, who had but little leisure or inclination for adorning their capital with expensive restorations of ruined statues, brought from so great a distance.

6. The history of the Gwalior statues then, ends abruptly in the latter part of Shah Jehan's reign; that of the Delhi ones commences as abruptly about the same time: what is more probable than that the two groups are identical, and that they were removed from Gwalior by Shah Jehan, who would gladly avail himself of this opportunity of transferring to his new palace and capital, works of art so celebrated? the only ones of their kind, apparently, that existed in his dominions, and the removal of which, in their uninjured state, would be a comparatively easy task; how the change of nomenclature may have arisen, I have already pointed out.

Memoranda relative to three Andamanese in the charge of Major Tickell, when Deputy Commissioner of Amherst, Tenasserim, in 1861.—By Col. S. R. TICKELL.

In May, 1861, three Andamanese, who had been captured near Port Blair some time previously, and sent over to Rangoon by the Superintendent, Colonel (then Major) Haughton, for educational purposes, were placed in my charge by Colonel Phayre, at that time Commissioner of Pegu.

Hitherto they had been attended to by one of the men of the Naval Brigade at Port Blair, to whom they seemed much attached ; but they were parted from their keeper at Rangoon, and sent over to Maulmein under the care of one of the Officers of the Steamer, who forwarded them to me on their arrival.

They were dressed, when I first saw them, in light sailor's costume, slops and jumpers of white duck, and straw hats, bound with broad black ribbon, bearing the ship's name to which their former guardian had belonged. They could not speak a single word intelligible to a by-stander, and looked so frightened and miserable amongst new faces, that after many attempts at coaxing and cheering them up, I considered the best plan to take them back to the steamer, and re-ship them for Rangoon. One of the small hack palankeen carriages that ply in Maulmein was therefore procured, into which they got with alacrity, fancying I suppose they were to be immediately driven to Port Blair, and off they started for the steamer. But I had hardly re-entered the house and commenced a letter to Colonel Phayre about them, when back they came, walking hand-in-hand with a Burman, amid a crowd of people, and appearing as excited and joyful as they were before dejected. On enquiring the reason of their return, I was told that as the carriage was proceeding up the road, they had espied a Burman whom they had known at Port Blair, and overjoyed at the sight of a familiar face, one of them had opened the door, and before the vehicle could be stopped, got out, (thereby receiving a rough fall on the ground,) and embraced his old friend, whom they all three accompanied back to my house, in great glee, laughing, patting him on the breast, and putting their arms round his neck. That same evening I engaged his services to take the immediate charge of the

Andamanese, and for the rest of their stay at Maulmein, they lived under his roof. The arrangement was particularly convenient, as the Burman "Moung Shway Hman" speaks English, which it was proposed to teach the Andamanese, and is a man of steady habits and good character.

The photograph which accompanied Colonel Fytche's paper in the J. A. S. No III 1862 will give a better idea of the physiognomy of these people than the most laboured description. Mr. Blyth, Curator of the Asiatic Society's Museum, and a remarkably accurate observer, was at Maulmein for some time with these Andamanese, and pointed out the leading peculiarities of their configuration, and as his remarks have been embodied in the report, which Colonel Fytche, Commissioner of Tenasserim, sent to the Journal of the Asiatic Society, it would be superfluous to dwell on this part of the subject; but I would take this opportunity of observing that I cannot agree with an opinion which has been more than once published, that the Andamanese have no affinity to the African race. They appear to me on the contrary, to be very closely allied. The small ear and the less gross lips are not, in my opinion, sufficient data on which to found a fifth, to the long established four grand divisions of mankind. From the few remarks to be gathered on the subject, in Bowring's account of the Philippines, it seems probable that the people of the interior, called Nigrettoes, who have so long withstood all attempts at civilization and communication with the Europeans and Eurasians of the coast, are the same race as the Andamanese. And further South, the ferocious savages of the interior of Sumatra, from whose hands Madame Plieffer had so providential an escape, are also probably the same, but she has not given a sufficiently detailed description of them to allow of certainty on this point. How this so-called Papuan tribe came to be so separated from the strongly defined geographical limits of the African race, and spread throughout the Eastern Archipelago, will perhaps ever remain a matter of conjecture: but their distribution throughout that space, from the Andamans to Sumatra, (if not further,) may be accounted for by the propinquity of those islands to each other.

Our three friends were named at Port Blair, Crusoe, Jumbo, and Friday, and labelled accordingly; each name being stamped on a tin medal worn round its owner's neck. The necessity for such an apparently whimsical arrangement may be understood, when it is

explained that this singular people have ' (as far as close observation allowed us to observe)' *no proper names* for each other, and readily learnt to adopt those by which they were ticketed.

On their arrival at Maulmein all three had bad coughs, and Crusoe and Jumbo evident phthisical symptoms. Crusoe's health improved after some time: but Jumbo gradually grew worse, and his malady was greatly increased from exposure during inclement weather, in an attempt to escape, which he and his companions made one stormy night. They made their way in a native canoe towards the mouth of the Maulmein river: but were glad, in three or four days, to return under the guidance of the village police to Maulmein. Jumbo never rallied from the effects of this excursion, and in spite of all that medical assistance could do, died in the jail hospital on the 12th June, nearly one month after his arrival. His comrades repaired to the hospital and showed signs of genuine grief at his death. They also performed some singular ceremonies over the body, which I wished to have witnessed repeated the next morning: but owing to some rather precipitate measures, taken without the slightest reference to myself, to prepare a skeleton of the deceased for presentation to the Asiatic Society's Museum, I was unable to do so.

Of the three, Crusoe, the oldest, (apparently about 35 years of age,) was the only one who showed any moroseness of disposition. Jumbo was of a cheerful gentle nature, and Friday the youngest, whose age might be 18 to 20, was at times very lively, good tempered, and fond of his immediate overseer Shway Hinan, and of myself. They came frequently to my house, and were allowed free access to every part of Maulmein. Their curiosity at every new object was great, but evanescent. They soon tired of everything, and when left alone, relapsed into dejection, making unintelligible speeches with lamentable signs, evidently about a return to their own country.

Some time after Jumbo's death, Crusoe showed consumptive symptoms, to a degree which made me despair of ever getting him alive back amongst his countrymen: but he fortunately rallied during the heavy rains, and left Maulmein for Port Blair comparatively well. Friday, after getting over a cough that at first troubled him, continued in robust health to the time of his departure. It is an extraordinary fact that savages, accustomed from birth to go naked, or nearly so, contract pulmonary diseases if forced to wear clothing. This has

been remarked amongst the aborigines of Australia and the South Sea islands. Crusoe's height is 5' 1 $\frac{1}{4}$ " That of Friday 4' 9 $\frac{1}{2}$ " The former is of rather a spare frame, which may be partly attributed to pneumonia. Friday is square, muscular, and deep chested. Both have small hands and feet; which, with their foreheads, are cicatrised all over with scratches inflicted on themselves as a cure for all manner of pains and aches; and the feet of both had a constant adematous appearance, with small feeble toes wide apart, as if they were never much used to pedestrian exercise. Both of them occasionally complained of headache, and would then smell with avidity at salts, stuff their nostrils with leaves freshly plucked, or as a last resource, score their foreheads with a knife or a piece of broken glass, till they bled pretty freely. They were much averse to taking our medicines, and Crusoe on one occasion threatened his Burman keeper with a knife, for trying to administer some nauseous dose. Neither of them would take to learning English. They repeated like parrots the words we endeavoured to make them understand, and at last grew so averse to their schooling, that at any attempt to commence it, they would feign fatigue or sickness as readily as any truant schoolboy. They were in fact *too old* to learn, and although Friday was smart and intelligent, he showed it more by his extraordinary powers of mimicry than by learning anything useful. This persistence in imitating every gesture and every sound of the voice, made it particularly difficult to obtain from him the Andamanese name of even any visible object. Those entered in the annexed vocabulary, have been elicited with no small labour and patience, by myself and their keeper Shway Hman. I succeeded in obtaining the names of a variety of fishes, (common to the bay of Bengal,) by showing coloured drawings of them: but of quadrupeds they appeared perfectly ignorant, the only mammal they seemed to know was a pig, "Rogo," and this name they applied indifferently to cattle, ponies, elephants, deer, and monkeys. They appeared also to have very few names for birds, and when shewn the pictures of some which I knew to be found in the Andamans, merely attempted to imitate the notes of any species they might have had in their minds at the time.

To judge by Crusoe and Friday, the Andamanese are not a timid race. They mingled unconcernedly amongst crowds of people, and at first used to help themselves to any thing they took a fancy to, off

the stalls in the bazar. When teased with the numbers looking at them, Crusoe would stride towards the throng, waving them off and calling out in Burmese "â-loong thwa" (go! all!) They took great pleasure in the pways or Burmese dances, and learnt to imitate the performances with marvellous exactness, to the great delight of the Burmese, who crowded to see them. Sometimes they exhibited their own national dance, which appears to consist solely in lifting their clenched fists above the head, and kicking the ground rapidly and forcibly with their heels. It has a peculiarly savage effect; but having apparently excited great mirth amongst the spectators, Crusoe and Friday took offence at such notice, and latterly never repeated their exhibitions. With the little hack carriages which ply in Maulmein they soon became familiar, and were treated to rides almost every day: and they would walk up to a pony, and hug it, though once or twice narrowly escaping a bite. When first taken to see some steam saw-mills where elephants were employed stacking timber, they showed no alarm at the huge animals, although the first they had ever seen, and Friday was about to walk up to and put a large tusker, when the bystanders restrained him. Of fire arms or of anything explosive however, they seem to have some dread. Latterly they learnt very well the use of money, and any cash in their possession was usually spent in the purchase of pork or other meat at the Chinamen's shops. Fruit (except plantains) or sweets, they cared little for; but were very fond of tea prepared in the English way. Fish they were indifferent to, also to rice: but they ate a great deal of meat and yams, making three hearty meals a day. I generally gave them a fowl when they visited me, and for which they took care to ask by calling out "kookroo koo" and imitating the cries of poultry. They killed the fowl by pressing the chest and neck, and swinging it round and round. They would then pluck, clean, and boil it, their usual mode of cooking anything. Occasionally they broiled meat on the fire: but never eat animal substance raw. But they never set about cooking for themselves if they could induce their keeper's wife "Ma Shway" to save them the trouble. At my house they were often allowed to sit at the breakfast table, where they behaved with decorum, but quite at their ease: lolling back in their chairs, and pointing towards anything they wanted. They learnt to use a spoon, knife, and fork readily.

In their visits to me I used to remark that Crusoe on first arriving would shout out something in his loud harsh voice. It occurred so often, that I am induced to think the act analogous to a custom in some parts of Ireland amongst the peasantry, where a man on entering a cottage calls out "Good luck to all here"—I have never been able to ascertain what it was that Crusoe said on these occasions.

As I before remarked, these people appeared to have no proper names. When one called the other, it was with a shout of "Hy" much as is used in hailing a cabstand. But occasionally they named each other Crusoe and Friday, and invariably spoke of their country as Blair. They learnt my name, but usually addressed me as "Má-ey, (Oh man) ; nevertheless it is difficult to conceive how any community can carry on intercourse without the aid of proper names both to persons and places, and I am not aware that such a strange deficiency has been observed in the language of any other tribe, however savage.

Although most pertinacious beggars, and glad to take anything offered them, their cupidity was chiefly shown for iron, of which they took with them from Maulmein, a large quantity in the shape of knives, forks, dás, or Burmese choppers, nails, scissors, hammers, and needles. They frequently sat for hours watching the blacksmiths at work, and also learnt to ply the needle with some skill and to use scissors. As they acquired a strong liking for clothing, it is possible they will not willingly return to their old habits of nudity, and so will find their sartorial accomplishments of advantage. Although I procured them a quantity of the coarse kind of tackle used for sea-angling, they took no interest in its use ; which is the more singular, as in their native state they are most expert fishermen, especially in spearing fish.

Friday procured a bow and some arrows, with which I met him one day armed, marching up the street at the head of a posse of idle boys : but I never had an opportunity of witnessing his skill in archery. He had seen guns fired but never attempted using one himself. They were both expert swimmers, their mode of progression being with the arms and legs alternately, the former under water : not striking out like an Englishman, nor throwing one arm out after another like the generality of continental Europeans. They could manage a Burmese canoe with ease : but never occupied themselves with paddling about for amusement. They evinced great pleasure in making short trips into the interior with their conductor, visiting

the numerous orchards and villages in the vicinity of Maulmein. And as the arrival of the mail steamer invariably renewed their hankering after their own country, I used latterly to send them away during the stay of the vessel in the port, and having found out their name for the moon "Chookleyro" I was able generally to soothe them when much dejected, by repeating the word, and "Blair kadó" (go to Blair), and holding up as many fingers as I supposed might mark the number of months they were likely to stay.

They were fond of tobacco, and of such snuff as was procurable in the bazar, but owing to the state of Crusoe's lungs, smoking was not allowed to him latterly. They seemed to take pleasure in having the scanty frizzly wool of their heads shaved off, an operation which was several times performed on them. They were very docile in learning habits of cleanliness: bathing every day, using soap, and getting their clothes washed, cleaning their plates after meals, sweeping the floor, &c. To "Ngapee," a strong smelling condiment made of dried and powdered fish, in universal use amongst the Burmans, they could never be reconciled. Besides the phlebotomising operation already described, they used, when in pain, and also when feeling chilly, to apply heated stones to the afflicted part; and on such occasions would huddle together close to the fire. They showed great pleasure at the sight of English children, and would kiss and fondle them if the little folks permitted it. To Burmese children also they evinced great partiality, and frequently caressed Shway Hman's daughter, a child of 5 years of age. Their grief at the death of their comrade Jumbo, was great, but not lasting.

When the time came for these poor creatures to return to their own country, and it was explained to them they were to go, which was chiefly done by patting them on the back with a smiling countenance, and repeating the words "Blair ka-do," without the ominous fingers indicating the moons yet intervening, their delight is not to be described. For the two nights previous to their departure for Amherst, where they were to embark on board the "Tubal Cain," they lay awake and singing, and had all their property carefully packed and put under their pillows. But at the moment of departure, they showed unwillingness to leave Shway Hman's wife behind, and when on board the ship, were disconsolate at their Burman friend himself not accompanying them. Fortunately they met there Lieut. Hellard I. N.,

whom they knew, and also a sailor of the Naval brigade at Port Blair, who had formerly charge of them, and to whom they were much attached, and under the care of these kind friends they reached their native country safely, and were, with all their traps, put on shore at a spot on the beach they pointed out, and quickly vanished into the jungle!

From that time to the present, I have heard no more of my quondam protégés: I cannot indeed distinctly ascertain whether either of them ever made his appearance again at Port Blair. An apprehension existed for a long time, that they had been murdered by their countrymen for the sake of the precious iron articles they had with them, and I know not whether such a conjecture has been refuted.

The experiment of civilizing these two, by weaning them from their wild habits and creating artificial wants, to supply which should involve the necessity of frequent visits to the settlement, and thus form as it were the nucleus of increasing intercourse with a superior race, has certainly so far failed. With younger subjects we might have succeeded better, particularly in teaching them English: but probably so at the expense of their own language and of their own habits to such a degree, that as interpreters or channels of communication with the natives, they would have been as useless as Crusoe or Friday. It remains to be seen what effects will by and bye arise from the repeated interviews between the aborigines and our people. Unfortunately these are frequently of anything but an amicable nature, and tend rather to widen than to bridge over the gulph between them. Indeed if the inference be correct, that the inhabitants are of the same race as the Nigrettoes of the Philippines, who to this day keep entirely aloof from the settlers on the coast, we may surmise that the colonisation of the Andaman islands, when its spread begins to interfere with the aborigines, will tend rather to the extermination of the latter, than to any amelioration in their condition. It is to be regretted that since the days of Colonel Haughton, very little information is published regarding our relations with this truly savage people.

Rangoon, July 28th, 1863.

*Vocabulary of Andamanese words, as ascertained from CRUSOE
and FRIDAY.*

NOUNS.

Fish,	Do.
Man,	Má.
Woman,	Chana.
Water, }	Pano.
Rain, }	
Moon,	Chookleyro.
Yam,	Chatee.
Plantains,	Eng-ngeyra.
Rope,	Allák (Bengali ?) alát.
Cocoanut,	Jayda.
Rice (unboiled,)	Anakit.
A stick,	Erreybat.
Spit, ..	Moochee.
A pot,	Tók.
String,	Garrik.
Cock (poultry,)	Kookroo (Beng.)
Plate or dish,	Wyda.
Hat, cover,	Seytey tók.
A carriage,	Raik (?)
Knife, }	Kooná.
Sword, }	
Pig, pork,	Rogo.
Noon or Sun ?	Aleyburdra.
A Sore,	Angoonchoon.
Fire,	Chaukay.
Fire-wood,	Chapa.
Meat, }	Rekdama.
Flesh, }	
Bread,	Ochata.
Boiled rice,	Chata.
A cheroot,	Dákanapo.
A snake,	Wangada.
A Bow,	Karama.
Broken bits of glass,	Beramato.
Needles, Arrow-head ? Bits of iron, Tólbót.	

Smoke,	Moralitorkay.
Maize,	Oodala.
A Rat,	Itnachamma.
Bones,	Tato.
Sugar Cane,	Teeree.
Sweet things,	Jóng.
Little girl,.....	Chanjibal.
Little boy,.....	Májibal.
Flower,	Cheyda.
Ship,	Cheyley.
A spider,	Nyonada.
A mosquito,	Tayla.
Tongue,	Kytala.
A tooth,.....	Tokadoobda.
A knee,	Lo.
Blood,	Pay.
Hair,	Eppce.
A foot,	Onkono.
A nose,	Icharónga.
A ear,	Pogo.
A eye,	Edala.
A hand,.....	Gogo.
Bits of cloth,	Rollo.
A gun,	Beerma (?)
A star,	Chittooree.
A stone,	Tylce.
Wax,.....	Pyda.
The head,	Pyleeda.
To-morrow,	Garra ?

ADJECTIVES OR PARTICIPLES.

Cold (as meat,)	Mauriwada.
Chipped	Lokkamen.
Lost or concealed ?	Kytalaya ?
Cold (as weather,)	Tatay.
Spilt,.....	Kaupilay.
Unripe,	Potowyk.
Hot,	Deggaralak.

Itching,	Dowkodoblak.
Good,	Ooba.
Bad,	Ookaooba.
Tired,	Odoola.
Dead,	Awalay.

VERBS.

To sit,	Deedo.
To sleep,	Mamee.
To take,	Nya.
To go,	Kadó.
To come,	Kameeka.
To bring,	Taw.
To walk,	Dikleer.
To dance,	Tykpa.
To throw away,	Apay.
To vomit,	Dadway.
To bathe,	Darcha.
To cut,	Kauppa.
To give,	Jay.
To broil, }	Pówet.
To roast, }	

ADVERBS.

Much,	Yád.
No,	Yabadá.

PHRASES.

Sit a little,	Tara deedo.
Much fish,	Yád do.
Stomach full,	Tek bo.
Don't go,	A kuddo.
Rain falls,	Pano lappa.
Put it down,	Gulla loongdakéy.
I will remain here,	Do palee.
Take it (from another,)	Nyey ree.
Let it be : Put it down,	Tota da.
I will not give,	Oochinda.
Let it alone,	Kookapa.

ROUGH GROUND PLAN
of the ruins at
BUDDHA GAYA.

Principal Temple.

6. Trench showing the plinth of the Temple.

I will drink,	Oowel lee.
There is none,.....	Tappee.
I want to sleep a little,	Tautaro mameekay.
Stomach aches,	Udda mookdoo.
I don't wish to stay,	Oopadopalee.
Boats are racing or rowing,...	Arra choro.
I have some, }	Gada.
There is some, }	
It is lost, or I can't find it.	Ky'ta laya.

Note.—Some of these phrases are only inferentially derived, that is from their constant recurrence under like circumstances. When Crusoe or Friday were hunting about for anything and could not find it, they used to say in a vexed tone “Kyta laya.” If offered anything, they would when refusing it in an *affirmative* manner, say “Gada” as if they had it already, and so on. It is very possible then that many of these phrases are not literally rendered.—S. R. T.

On the Ruins of Buddha Gayá.—By Bábú RÁJENDRALÁLA MITRA.

Having had lately an opportunity of devoting a short time to the examination of the Buddhist remains at Buddha Gayá, I believe a brief account of the excavations now being carried on at that place will not be unacceptable to the Society. Accordingly I do myself the pleasure of submitting to the meeting this note along with a drawing (done from memory) of the ground plan of the ruins, as also a sketch of the railing round the great temple at that place. They have been worked out from notes taken while on my travels, and may be relied upon as generally correct. I had no instrument with me for taking accurate measurements, and as Capt. Mead, the able officer who is now superintending the excavations, will, ere long, submit to Government a detailed report of his proceedings and discoveries illustrated by carefully prepared drawings, and as my object was simply to see what was in progress, I did not think it necessary or proper to take any measurement or anticipate the work of that gentleman.

Buddha Gayá is one of the most celebrated places in the annals of Buddhism. There it was that S'ákya devoted six long years in deep meditation to purify his mind from the dross of carnality, by abstaining altogether from food, and subjecting his body to the most unheard-

of hardships ; there he repeatedly overcame the genius of sensuality—*Māra*, who assailed him with his invincible host of pleasures and enjoyments to lead him astray from his great resolve ; and at that place he attained to that perfection which enabled him to assume the rank of a Buddha, the teacher of man and gods and dispenser of salvation. The exact spot where these protracted meditations and austerities were carried on, is said to have been the foot of a pipul tree, and hence that spot is held in the highest veneration by the followers of the Saugata reformer. It was believed to be the holiest place on earth ; temples and monasteries were erected round it even during the life time of S'ákya, and as long as Buddhism flourished in India, it was the resort of innumerable hosts of pilgrims from all parts of the Buddhist world. With the downfall of Buddhism the place lost its grandeur, and at the end of the tenth century was, according to an inscription published in the *Asiatic Researches*, (Vol. I. p. 284) by Wilkins, “ a wild and dreadful forest,” “ flourishing with trees of sweet scented flowers,” and abounding in “ fruits and roots,” but “ infested with lions and tigers, and destitute of human society.” A magnificent temple, however, still stands, and around it vestiges abound to attest to its former greatness. General Cunningham has even recognised the identical flag of stone upon which on one occasion Buddha, while a roving mendicant, sat and ate some rice presented to him by two maidens.

The tree, however, under which Buddha sat, and which was the greatest object of veneration, has long since disappeared, and its place is now occupied by one which, though decayed and dying, is scarce two hundred years old. It stands on a masonry basement of two steps about six feet high, and built on a large terrace of concrete and stucco. Its immediate predecessor probably stood on a level with the first step which seems to have been raised long before the second. The third predecessor, according to this idea, was on a level with the terrace, and as that terrace stands about five and twenty feet above the level of the surrounding country, and as Capt. Mead, in course of his excavations, has found traces of two terraces, one very distinct, at intermediate depths, it is to be presumed that several trees must have from time to time occupied the spot where stood the original *Boddhidruma*, or “ Tree of Knowledge,” under which Buddha attained to perfection. It is no doubt possible that as earth and rubbish accumulated round

the original tree, people from time to time built raised terraces and covered up its roots, so that the tree in a manner rose with the rise of the ground-level, and that every new terrace or step was not necessarily an evidence in favour of a new tree; but the fact of the tree that now exists being a modern one, warrants the presumption of its having had several predecessors at different times. Moreover, as the plan of renewing the tree was evidently not by cutting down the old and planting a new one in its place, but by dropping a seedling in the axilla or a decayed spot of the old tree, so as to lead to the supposition that it was only a new shoot of the parent stem and not a stranger brought from a distance, it was found necessary to cover up the root of the new comer under guise of putting fresh mould on the root of the old one, to prevent the imposition being discovered. Hence it is that the present terrace is much higher than the tops of the surrounding heaps of rubbish.

Close by the tree, on the north side, is placed the Burmese inscription noticed by Col. Burney in the last volume of the *Asiatic Researches*. And immediately to the east of it stands the great temple of the place, a monument rising to the height of 160 feet from the level of the plain. Its pinnacle is broken; when entire it must have added at least twenty feet to the altitude of this cyclopæan structure. General Cunningham, in his *Archæological Survey Report for 1861-62*,* has given a full description of this edifice; but there is one point of importance in it which escaped his notice, and to it, therefore, I wish to draw particular attention: I allude to the existence of three complete arches on the eastern face of the building. The doorway is wide but low, and is formed of granite side-posts with a hyperthyron of the same material. That was, however, supposed to be unequal to the weight of the great mass of masonry rising to the height of near 150 feet, which rested on it, and three Saracenic or pointed arches were accordingly thrown across to remove the weight from the hyperthyron to the side abutments. Two of these arches have fallen in, breaking exactly where an over-weighted arch would break, namely, at the points where the line of resistance cuts the intrados. The third is entire. It is pointed at the top, but is formed, exactly as an arch would be in the present day, of voussoirs or arch-stones placed wedgewise, the first and last of which are sustained on the abutments, while the intermediate

* *Ante* Vol. XXXII. p. vii.

ones are held together in their position by their mutual pressure, by the adhesion of the cement interposed between their surfaces; and by the resistance of the keystone. Such a structure in an Indian building more than two thousand years old, struck me as a remarkable proof of the Hindus having had a knowledge of the principle of the arch at a very early period, though the credit of it has been denied them by all our Anglo-Indian antiquaries. Fergusson, in his *Hand Book of Architecture*, concedes to the Jains a knowledge of the horizontal or projecting arch, but adverting to the radiating or true arch, says, (Vol. I. p. 78) "In the first place no *tope* shows internally the smallest trace of a chamber so constructed (*i. e.* with a true dome)—nor do any of the adjacent buildings incline to such a mode of construction which must have ere now been detected had it ever existed." Elsewhere he observes (p. 254) "The Indian architects have fallen into the other extreme, refusing to use the arch under any circumstances, and preferring the smallest dimensions and the most crowded interiors, rather than adopt what they considered so destructive an expedient." Adverting to the *Kotub*, he says, "all the openings possess pointed arches which the Hindus never used" p. 418). Again, "the Hindus however up to this time (*i. e.* of the Pathans) had never built arches, nor indeed did they for centuries afterwards" (p. 424). These remarks do not, it is true, directly mean that the Indians had no knowledge of the arch, but they imply it. Elphinstone is more positive. In his remarks on Hindu bridges, he says, "Nor does it appear that the early Hindus knew the arch, or could construct vaults or domes, otherwise than by layers of stone, projecting beyond those beneath, as in the *Treasury of Atreus in Mycenæ*." (*Hist. of India*, p. 163.) Depending on the testimony of these distinguished antiquarians one may very reasonably assign to the Buddha Gayá temple a much later age than it claims, but the fact of its having been visited by Fa Hian and subsequently by Hiouen Thsang long before the advent of the Mahomedans in this country, inevitably leads to the inference of its having existed at a pre-mahomedan era, while the position the arches occupy, is so natural and integral that it leaves no room for the hypothesis that they were subsequent additions. I brought the fact to the notice of Capt. Mead, who had kindly undertaken to shew the ruins to me, and he readily acknowledged that the builders of the temple, whoever

they were, certainly knew the art of constructing an arch, and the one before us was a very good specimen of it. The entrance gate to the courtyard of the temple has a similar arch over it, though there it has no superstructure to sustain, and seems to have been built more as an ornament than otherwise. It may not be amiss here to observe that by the selection of the pointed, instead of the semicircular, arch, the builder has displayed a correct appreciation of the superiority of the former in regard to its weight-bearing capabilities.

In a line with the gate, and to its north, there formerly stood a range of small temples, which have since fallen in, and been entirely buried under rubbish. Capt. Mead has laid bare five of these, and in one of them I saw a colossal figure of Buddha seated on a lotus throne, with the hands resting one upon the other on the lap. This position is called the *Dhyána Mudrá* or the "meditative position," and it was thus that Śākya passed his years of mental abstraction under the great pipul tree. There is an inscription on the throne which records the dedication of the figure by one Boddhikhsana of the village of Dattagalla, the writer being Upavyāyapurva an inhabitant of Masavāgra. The character of the writing is the Gupta of the 4th century. The letters have been carefully cut and well preserved.*

Beyond these temples Capt. Mead has excavated a trench from east to west, laying bare a line of stone railing which formerly enclosed the courtyard of the great temple, running close along the base of the terrace around the sacred tree. It was formed of square granite pillars,

* The inscription comprises three slokas in the fascile octosyllabic anusṭup, and runs as follows.

दमनिम्नरयरचित्ता सर्वसत्त्वानुकम्पिने ।
 सर्वमन्तरमदार स्थितमारायपतयो ॥
 शुद्धात्माकारयामास बोधिमार्गरेतोयतः ॥
 बोधिचयेति विख्यातो दत्तमङ्गनिवासिकः ॥
 सर्ववन्धविमुक्त्यर्थं पित्रोर्बन्धुजनस्य च
 तयोपन्यायपूर्वकं मासवापनिवासिन ॥ लि ॥

Translation. "Salutation to (Buddha) whose mind is ever directed towards the control of his passions, and who is kind to all created objects, and this with a view to overcome the resources of Māra lodged in blissful gardens of unlimited expanse. (P)

Bodhikabana, the pure-hearted, of the village of Dattagalla having his mind devoted to the dispensation of Buddha, dedicated this (statue) for the removal of all kinds of bondage from his parents and relatives. Upavyayapurva of the village of Masavāgra wrote this." The author could not condense in the verse the word "wrote," so he has given it in initial after it. The third and fourth feet of the first verse are not intelligible.

each having three medallions on the front and three mortises on each side for the tenons of as many cross bars. On the top was a coping stone rounded above, but flat beneath. The pillars were seated on a square base with mouldings on each side. The falling in of the monastery which stood immediately to the north of it, broke and buried the railing, and the only parts now found *in situ*, are the stumps of the pillars and the basement. Fragments of bars and pillars are met with in plenty within the rubbish, but a great number of the bars had, evidently, been removed before the rest were buried.

To the west of the terrace a deep trench, cut through the rubbish, has brought to light the continuation of the railing on that side, but in a comparatively better state of preservation. In the middle of the line right opposite to the sacred tree there was a gate having the side pillars highly ornamented. Probably similar gates originally existed at the four cardinal points, but their traces are no longer visible.

In style, ornament, and material the railing bears a close resemblance to those of Buddhist remains in other parts of India. General Cunningham, adverting to those at Bhilsa, observes, "the style is evidently characteristic and conventional, as it is found wherever the Buddha religion prevails. It is in fact so peculiar to Buddhists that I have ventured to name it the 'Buddhist railing.' This peculiar railing is still standing around the principal topes of Sanchi and Andher, and some pillars and other fragments are still lying around the great topes at Sonari and Sâtdhará. The same railing was placed around the holy Bodhi trees and the pillars dedicated to Buddha. The balconies of the city gates and the king's palace were enclosed by it. It formed the bulwarks of the state barge. It was used as an ornament for the capitals of columns as on the northern pillar at Sanchi, and generally for every plain band of architectural moulding. At Sanchi it is found in many places as an ornament on the horizontal bars which separate the bas-reliefs from each other, *Bhilsa Topes*, (p. 187)."

The trench opened on the south of the great temple, has been run close to its base with a view to expose the basement mouldings and the tiers of niches holding figures of Buddha, which were the prevailing ornament of the temple. Capt. Mead has in contemplation to run another trench parallel to the last, but at the same distance from the temple as the trench on the north is. This will most probably bring to light the third side of the railing.

Two or three trenches have been run through the extensive mass of rubbish to the north of the great temple, leading to the discovery of nothing beyond a few cells for resident monks, a great number of whom must have found their living in the neighbourhood of this once sacred spot.

Within the courtyard and opposite to the entrance, stands a small open temple formed of four granite pillars covered over by a heavy stone roofing. In the middle of this there is a large block of basalt, the material so largely used by Buddhist sculptors in the manufacture of their statuary, bearing on its upper surface the carving of two human feet, and a Sanskrit inscription on one side. On the centre of each foot are engraved, within a circle, the figures of a conch, a flag, a lotus, a *swastika* or magic figure of prosperity, a fish, and a few other objects which I could not well recognise.

The name by which this stone is commonly known is *Buddhapad*, or "Buddha's feet." It is remarkable, however, that the inscription on it does not at all allude to Buddha. It begins with the usual Brahminic invocation of "Om," gives the date in S'aka 1230, and records the names of Rávatáji and Baladevaji as the dedicators of a temple. The letters are rather smudgy, and the facsimile prepared by me is peculiarly so, it is possible therefore that my interpretation of the monument may be questioned, but the great test of the creed of an oriental document is the salutation at the beginning, and that salutation in the record under notice, being the mystic "Om," which is common both to the Hindu and the Buddhist, it is impossible to determine to which of the two rival creeds the stone is to be assigned. Nor are the emblems engraved on the feet favourable to an easy solution of the question. They conform to no known canons of palmistry Hindu or Buddhist, regarding auspicious marks on the sole of the feet.

The Lalita Vistara, (Chapter 7) in giving an account of the peculiar marks on, and the character of, S'ákya's feet, says "He has expanded hands and feet, soft fresh hands and feet, swift and agile hands and feet (like those of a snake-catcher), with long and slender fingers and toes. On the soles of the feet of the great king and prince (Mahárajá Kumára) Sarvátha-siddha are two white wheels, beautifully coloured, bright and refulgent, and having a thousand spokes, a nave, and an axle-hole. His feet sit evenly on the ground." Such a wheel we look for in vain on the foot-marks at Buddha Gayá. Again in the Museum of the Society there is a large flag of white marble bearing

the figure of a human foot surrounded by two dragons. It was brought from a temple in Burmah where it used to be worshipped as a representation of Buddha's foot. It is $7\frac{1}{2}$ ft. long by 3 ft. 6 inches in breadth, and has on it a great number of mystical marks. On the centre of each toe there is a figure of a conch-shell and a concentric line under it. A conch occurs also at the heel. On the centre of the sole, there is a circular figure with innumerable radii, standing evidently for the wheel with a thousand spokes described above. Around this wheel are arranged, in three tiers, one hundred and eight compartments bearing representations of temples, houses, forests, rivers, men in different attitudes, birds and beasts of various kinds—mostly imaginary, leaves and flowers, magical figures and other objects unintelligible to me. But I do not find the counterparts of these objects in the foot-marks at Buddha Gayá. There the figures are, it is true, included within a circle, but it has no wheel of a thousand spokes. Its prevailing emblems are more Hindu than Buddhistical. The lotus, the *swastika*, the fish and the discus are identically what has been assigned to Vishnu's feet in the Brahminical shástras. Thus in the Skanda Purána I find the marks on Vishnu's feet are enumerated at 19, including, 1 a crescent, 2 a water jar, 3 a triangle, 4 a bow, 5 the sky, 6 the foot-mark of cattle, 7 a fish, 8 a conch, 9 an octagon, 10 a *swastika*, 11 an umbrella, 12 a discus, 13 a grain of barley, 14 an elephant goad (ankus,) 15 a flag, 16 a thunderbolt, 17 a jambu fruit, 18 an upright line, and 19 a lotus, of which the first eight belong to the left and the rest to the right foot.* Biswanátha Chakravartí, in his gloss on the Bhágavat Purána (10th book), has given the marks appropriate to the foot of Rádhá which include, 1 an umbrella, 2 a wheel, 3 a flag, 4 a creeper, 5 a flower, 6 a bracelet, 7 a lotus, 8 an upright line, 9 an elephant goad, (ankus) 10 a crescent, 11 a grain of barley, 12 a javelin, 13 a club, 14 a car, 15 an altar, 16 an earring, 17 a fish, 18 a hill, and 19 a conch.† The first eleven of these belong to the

* चन्द्रार्धं कलसं चिकोचधनुषी खं गोप्यदं पोटिकां ।

मङ्गलं सम्यपदेश्य दक्षिणपदे कोशाटकं खलिकं ।

खयं चक्रायवाहुमध्वजपविं जम्बूद्वैरेखाम्बुजं ।

विधाखं हरिभूजं विंशतिमहालक्ष्मार्चिताङ्गिं भजे ॥

† क्षारिभजवह्निपुष्पवलयान् पद्मोद्गरेखाङ्गुलं

चर्द्वेन्दुच यवच वामचरणे मङ्गिं गदाख्यन्दनं ।

वेदीकुण्डलमक्षयपर्वतदरं घण्टेयसमे पदे ।

ना राधां चिरभूजविंशतिमहालक्ष्मार्चिताङ्गिं भजे ॥

left, and the rest to the right foot. The scholiast has pointed out at length the different places which these marks should occupy and the objects they subserve at those places. His opinion has been questioned, and Vaisṇava writers of eminence have distributed these marks in very different ways. None has, however, to my knowledge, brought them together within a circle on the centre of the sole, as we find them at Buddha Gayá.

The date of the inscription on the Buddhapaḍ is S'aka 1230 = A. D. 1308, and the characters are the nearest remove from the modern Devanāgarī. The inscription must have been engraved immediately after the completion of the sculpture of the feet, for it is not likely that the profane hands of an engraver would be allowed to touch a stone, which had been, for any length of time, sanctified by the adoration of thousands, while the Hindu character of the emblems does not permit the supposition of the stone having existed at Buddha Gayá during the supremacy of the Buddhists. They suggest the idea that the foot-marks in question are of Hindu origin, and were put up by Hindus to reduce the place and its old associations to the service of their creed. Such adoption, whether insidious or avowed, of the holy places as well as the rites and ceremonial observances of one sect by another, has been common enough in the history of religion. We meet with it everywhere, and no where more prominently than in India among the Hindus and the Buddhists. There is scarcely one Hindu temple in ten of any great age in which is not to be seen some relic of Buddhism borrowed by the Brahminists. The great temple of Poori, which every year draws together pilgrims by hundreds of thousands from all parts of India, most of whom are prepared to lay down their lives for the truth and sanctity of the holy idol Jagannātha, is a Buddhist edifice built on the plan, and very much in the style, of the sacred monument at Buddha Gayá,* and the idol itself is no other than an emblem of *Dharma*, the second member of the Buddhist triad, represented by the old Pali letters *y. r. v. l. s.*; while tradition still preserves the memory of its Buddhist origin and calls Jagannātha the incarnation of Buddha, (*Buddhāvātara*).† It is not too much

* A closer parallel is met with in the temple of Barroli near the fall of the Chambul. The domical structure on its top and that of the Poori monument is not however met with at Buddha Gayá.

† Cunningham's *Bhilsa Topes*, p. 358 and Laidlay's *Fa Hian*, p. 21—261. There is an inscription on the temple of Jagannātha which assigns, the temple to Ananga

then to assume that on the suppression of Buddhism in the 10th and 11th centuries, attempts were made and successfully carried out, of converting Buddhist temples to Hindu usage, and that the foot-marks at Buddha Gayá are the result of one of those attempts.

We have, however, more than *a priori* arguments to establish the fact. In an inscription of the 10th century to which reference has already been made above, it is distinctly stated that a *Buddhapad* or Buddha's foot was set up at Buddha Gayá expressly for the purpose of performing thereon the Hindu rite of *śrāddha*. Now as the liturgy of the Buddhists does not recognise that ritual, it must follow as a matter of course that the inscription is a Hindu one, and since its date is posterior to the downfall of Buddhism, it must be taken for granted that those who put it up, desired to reduce Buddha Gayá to the service of Hinduism by, what is commonly called, "a pious fraud."

The inscription itself is no longer traceable at Buddha Gayá. But its translation in the 1st volume of the *Asiatic Researches*, coming from the pen of Sir Charles Wilkins, may be taken as its exact counterpart. It starts by saying that "in the midst of a wild forest resided Buddha the author of happiness and a portion of Náráyana. He was an incarnation of the deity Hari, and worthy of every adoration." The illustrious Amara Deva accidentally coming to the forest discovered the place of Buddha and with a view to make the divinity propitious, performed acts of severe mortification for the space of twelve years. The deity pleased with this devotion appeared to Amara in a vision and offered him any boon that he wanted, and on Amara's insisting upon a visitation, recommended him to satisfy vicariously his desire for a sight of the deity by an image. An image was accordingly made, and Amara eulogised it by calling it Brahmá, Vishṇu, Mahes'a, Dámodara, and by attributing to it all the great deeds performed by Vishṇu in his various incarnations. "Having thus worshipped the guardian of mankind, he became like one of the just. He joyfully caused a holy temple to be built of a wonderful construction, and there were set up the divine foot of Vishṇu for ever purifier of the sins of mankind, the images of the Pándooos, and of the descents of Vishṇu, in like manner of Brahmá and the rest of the divinities.

Bhima Dēva of the Gangá Vansa Dynasty (A. D. 1196,) but he is said to have only rebuilt or repaired what had existed for many centuries before his time and been subjected to many vicissitudes.

This place is renowned ; and it is celebrated by the name of Buddha-Gayá. The forefathers of him who shall perform the ceremony of the *Srāddha* at this place shall obtain salvation. The great virtue of the *Srāddha* performed here is to be found in the book called *Vāyu purāṇa* ; an epitome of which hath by me been engraved upon stone." The inscription writer then goes on to say that Vikramāditya was certainly a renowned king ; that there lived in his court nine learned men who were celebrated as the "nine jewels ;" that one of them was Amara Deva, and it certainly was he who built the holy temple. The concluding paragraph states that "in order that it may be known to learned men that he (Amara) verily erected the house of Buddha," the writer "recorded upon stone the authority of the place as a self-evident testimony," on Friday the 14th of the wane in the month of Chaitra in the year 1005 of Vikramāditya=A. D. 948.

The writer leaves his readers entirely in the dark as to who he was ; he does not even deign to give his name, and he talks of things which happened a thousand years before him. Such testimony can have no claim to any confidence. The value of an inscription depends upon its authenticity and contemporaneousness—upon being a record of circumstances that happened in the time of the writer, who must be a trustworthy person. But here we have none of those conditions fulfilled. We have a tradition a thousand years old, if any such tradition then existed, served up by an anonymous writer on the testimony of so unvarnished a witness as the *Vāyu Purāṇa*. The tradition itself bears the stamp of fabrication on its very face. Buddha Gayá, whatever it was in the time of the writer, could not have been "a dreadful forest" "infested by tigers and destitute of human society" in the first century before Christ, when Buddhism in India was in the zenith of its splendour, and when the place of Buddha's apotheosis was held the most sacred spot on earth. Nor could Amara Siṅha of the Court of Vikrama who was known to have been a staunch Buddhist* and a clever scholar, be so far

* General Cunningham calls Amara a bráhmaṇa. But in the invocation at the beginning of his Dictionary the great lexicographer has given no reason to his readers to describe him as such. The invocation itself is as follows :

यस्य ज्ञानं दयसिन्धो रगाधस्थानवाग्नुषाः ।

सेव्यतामन्त्रयो धीराः सन्निवेशाम्नाय च ॥

"To him who is an ocean of wisdom and mercy, who is unfathomable, and whose attributes are viceless, even to him, O intelligent men, offer ye your adorations for the sake of prosperity and immortality."

forgetful of his religion as to glorify his god by calling him Hari, Viṣṇu, Brahmá, the destroyer of the demon Keshi, the deceitful Vamána who cheated the giant Bali of his dominion, or a little shepherd tied to a post with a rope round his waist for stealing butter from the house of his neighbours. Such stories belong exclusively to the Purāṇas and can never be expected in a Buddhist writing. Then the Amara of Vikramāditya's court and author of the Dictionary was a Káestha, and his surname was Siṅha.* I have nowhere seen him addressed as a Deva, which title formerly belonged exclusively to Brahmans and kings, though of late years the rule has been considerably relaxed. The story of the dream is of course a fiction, and the state-

Here the deity invoked is not named; and the commentators having tried to the utmost their ingenuity to apply the verse to most of the leading Hindu divinities, but finding it inapplicable, have one and all taken it to imply Buddha.

Mallinātha, the most distinguished among the scholiasts and the author of at least twenty different commentaries, explains the verse thus. "O intelligent men, for the sake of "prosperity," i. e. wealth, of "immortality," i. e. salvation, adore Buddha, whose virtues, whose charities, whose forbearance, &c. &c.

(हे धीरा त्रये च्छुद्धये चान्ताय मोक्षाय च स बुद्धः सेवतां यस्य बुद्धस्य गुणा दा नशीलसमादय इत्यादि। MS. As. Soc. Lib : No. 188, p. 5).

Raghunātha, another commentator of some eminence, says : "O intelligent men, Let that Buddha be adored, that is by you. Here, though Buddha is not openly named still it is evident from the epithets used that he is meant. This is called the rhetoric of *prasaḍa*. Thereof it has been said by Kanthābharaṇa, where the object is evident from the meaning such a figure of speech is called *prasaḍa*, thus (the verse) "here rises the breaker of the sleep of the lotus," without alluding to the dispersion of darkness or the assuaging of the sorrow of the brahmin's goose, evidently means the sun."

अथवा हे धीराः स बुद्धः सेवतां अर्थात् भवद्भिः इहानुक्तेषु बुद्धो विशेषणेन प्राप्तं प्रतीयते इति प्रसादनामायमलङ्कारः। तदुक्तं कण्ठाभरणेन। यत्र प्राकथ्यमर्थस्य प्रसादः सेभिधीयते इति। यथा, अयमदयति निद्रामञ्जनः पद्मिनीनामित्यत्र तमेदिध्वंसनकोकाशककरणादिभिरनुक्तेषु स्वर्यः प्रकारादुपलक्ष्यते।

(As. Soc. MS. No. 443, p. 2). Nārāyaṇa, another commentator, in the Padārtha Kaumudī has reproduced the words quoted above without a remark. (As. Soc. MS. No. 438, p. 1). Rāmānātha Chakravartī, after explaining the verse as applicable to Buddha, accounts for the name of Buddha not being openly given in the invocation notwithstanding the epithets used being peculiarly his, by saying "that to conciliate those who are not Buddhists the name of Buddha has not been used."

बुद्धविशेषणमेवेति बुद्धशब्दोपादानं न ह्यतः। (As. Soc. MS. No. 443, p. 1, second series of pagination). This remark has been quoted verbatim by Raghunātha Chakravartī in his commentary on the Amarakośa. (As. Soc. MS. No. 173, p. 1).

* I have no better authority for saying this than the author of the *Kāyastha Kaustubha*.

ment of a temple built for Buddha having for its chief penates the image of Vishnu's feet, those of the five Pandu brothers and of the several incarnations of Vishnu, is equally so.

It was not expected that a distinguished scholar like General Cunningham with his thorough knowledge of Indian antiquities, should accept the figments of this inscription as true. He has however taken for granted that the great temple was built by Amara Siñha, and, as that individual was a contemporary of Varáha Mihira and Kálidása who, according to Bentley and others, lived in the 5th century, inferred that the temple must have been built in A. D. 500. His arguments are, first the non-existence of any temple in A. D. 400 when Fa Hian visited the place; second, the recorded erection of a large one by Amara Deva about A. D. 500; and third the exact agreement in size as well as in material and ornamentation between the existing temple and that described by Hiouen Tshang between A. D. 629 and 642.

Of these, the most important argument is the first, in which it is said that there was no large temple in existence at Buddha Gayá when Fa Hian visited the place between A. D. 399 and 414. It would at once establish the fact of the great temple of Buddha Gayá being subsequent to the date of Fa Hian's pilgrimage. But on referring to the itinerary of that traveller, I find that instead of his saying that there was no temple, he reiterates the fact that there were several temples in Buddha Gayá at his time, and that the temple near the Bodhi tree was one of them. The account of his travels is unfortunately very meagre. It is a simple recital of names of places and their distances, with a superabundance of legends, but with no topographical details. Still it is very precise as to the existence of temples near the Bodhi tree. Thus in the 31st Chapter (p. 277) we find it stated that at the place where Foe obtained the law *i. e.* near the holy popul tree, "there are three *Sang kia lan*, and hard by are establishments for the clergy who are there very numerous. The people supply them with abundance, so that they lack nothing." In another place in the same chapter, Fa Hian, describing the approach and residence of S'ákya at Buddha Gayá, says: "The *Phousa* rose, and when he was at the distance of thirty paces from the tree, a god gave him the *grass of happy omen*: the *Phousa* took it and advanced fifteen paces farther. Five hundred blue birds came and fluttered three

times around him, and then flew away. The *Phousa* advanced towards the tree *Puto*, held out the grass of happy omen towards the east, and sat down. Then the *king of the demons* sent three beautiful girls who came from the north to tempt him, and himself came with the same purpose. The *Phousa* then struck the ground with his toes, and the bands of the demon recoiled and dispersed themselves; the three girls were transformed into old women. During six years he imposed upon himself the greatest mortifications. In all these places people of subsequent times have built towers and prepared images which exist to this day." Lest this be supposed too general, Fa Hian again observes "The four great towers erected in commemoration of all the holy acts that Foe performed while in the world, are preserved to this moment since the *ni houan* of Foe. These four great towers are (1st) at the place where Foe was born, (2nd) at the place where he obtained the law, (3rd) at that where he turned the wheel of the law, and (4th) at that where he entered into *ni houan*." Here we have the positive testimony of the very traveller whom General Cunningham has quoted that a great tower, one of the four largest, existed in his time at Buddha Gayá at the end of the 4th century. But had this evidence been wanting the fact of one of the minor temples at that place having a statue inscribed with the Gupta character of the 4th century, would fully warrant the assumption of the main temple, whose reflected sanctity the little ones sought to imbibe, being considerably older. If we add to this the Buddhist belief reported by Hiouen Thsang and the Ceylonese chronicles, of Asoka having raised a lofty temple at Buddha Gayá, we have ample grounds to assign to the existing temple an age dating from the third century before Christ, and under any circumstance one considerably anterior to the 4th century A. D. of the Christian era.

The second argument of General Cunningham is founded upon the authenticity of the inscription translated by Sir Charles Wilkins, and the deduction of Kálidása, Varáha Mihira and Amara Siñha having been contemporaries in the 6th century. But as I have, I hope, satisfactorily shewn that that inscription is "not historically true," "the claims of reason," to quote the language of Niebuhr, "must be asserted, and we must not take anything as historical which cannot be historical."

As regards the argument founded on the exact agreement in size as well as in material and ornamentation between the existing temple and that described by Hiouen Thsang, it establishes only the fact of the present temple having existed in the beginning of the 7th century, but does not bar the probability of its also having existed many centuries before the advent of that traveller.

Both Hiouen Thsang and the writer of the Burmese inscription of Col. Burney, state that the temple was originally built by As'oka, and we see no reason to doubt their assertion. Bearing in mind how lavish As'oka was in his expenditure for the erection of towers and monuments in all parts of India, it is but natural to suppose that he had selected the spot where the founder of his religion attained to perfection as the most appropriate place for the largest and loftiest of his monuments. That such a monument should have lasted for six hundred years when Buddhism was still on the ascendant, so as to be visible in the time of Fa Hian, is not in the least improbable. No doubt the structure had had several repairs, and it is to these probably that the Burmese inscription, and Hiouen Thsang refer when they allude to the legend of the dream and the consequent "rebuilding" of the monument, but they do not controvert the position of its having been in the first instance erected by As'oka.

P. S. Since writing the above I have read Montgomery Martin's notice of the temple at Buddha Gayá (Eastern India, I. p. 23) and Buchanan Hamilton's description of the ruins at that place (Transact. Rl. As. Soc. II. p. 41). Both allude to the tradition about Asoka's having erected the temple, and express doubts regarding the authenticity of Amara's inscription. Hamilton describes a two-storied room near the temple which I did not see.

Description of a new species of Paradoxurus from the Andaman Islands.—By Col. TYTLER.

As the mammalia found on these Islands must be of interest, I beg to send you the following description of a NEW *Paradoxurus* which I have named after myself,

PARADOXURUS TYTLERII.

Length from tip of snout to end of tail 3 feet and 5 inches, of which the tail alone measures 1 foot and 8 inches, and the head about 6 inches, height at shoulder 8 inches, general colour, dark bistre brown, thickly mixed with longer light hairs of an Isabeline colour, giving the animal a changeable colour from dark to light according to circumstances; the entire under surface is of a pale Isabeline hue; feet, muzzle, and ears dark, eyes hazel; whiskers white, mixed with a few black hairs; nails nearly white; teeth strong; cheeks dark; light down the nose, and about the eyes; very vulpine in appearance; tail round not prehensile. Naked area or glandular fold between the anus and the genitals; large feet of moderate size; fur very thick and of a moderate length. The above was taken from an adult male. In habits they are very nocturnal, and appear to feed almost entirely on fruit and vegetables. I had two males caught with a great deal of difficulty alive, but they soon died in captivity: I have preserved their skins and skeletons. Their call is rather cat-like, and they appear rather inoffensive in their habits, notwithstanding that at times they fought slightly with each other. I trust this brief account may be acceptable, and if so, should you desire it, I shall be happy when opportunities offer, to send you further notes from these distant islands.

I ought to mention that the *Paradoxurus* I have described is not very common; the two I obtained were both from Viper Island where they do great havoc amongst pine apples: they are great tree climbers, nocturnal in their habits, and living during the day in holes.

8th June, 1863.

Extract from Journal of a Trip to Bhamo.—By Dr. C. WILLIAMS.

February 3rd.—At about midday reached the neighbourhood of Tagoung. The river here runs between a portion of the Mingwoon range of hills, which, covered with forest, slope to the water's edge of the right bank,—and a steep bank of sandstone with a fringe of sand-banks on the left. Its course is from N. to S. About a mile below Tagoung I went on shore with a Burman who professed to know all about the old city. Along the bank on which we walked and which was formed of debris from the sandstone of the steep true bank, we proceeded about half a mile, when we entered a lane to the right, having on our left the old city wall of Tagoung, and on our right a stony and brick strewn rise that appeared to be also a ruined wall: we continued thus due east for about a quarter of a mile, when the wall on our left turned towards the N. E. and the rise on the right continued its easterly direction. On the north side of this latter the ground was on a level with the top of the rise. My guide declared it to be the north wall of Pagan; I rather thought it the run of an ancient counterscarp to the south wall of Tagoung.

I ascended the Tagoung wall with great difficulty, for the jungle, which is thicker and higher on the wall than elsewhere, contained many of the tearing and scratching species of plants that so frequently defy intrusion on a Burman jungle. Its brick structure was everywhere plain, and I should guess its outside height at the south and south-east sides, to be twenty feet. I tried to keep along the low ground close to the wall, but was obliged to submit to be guided round by a path, that after a circuit to the east, brought us to an eastern gateway. The brick work was here very hard and the backing of earth equally so. Just within the gateway were two decayed gate posts smaller than the gate posts of a good-sized Burman compound, but of the same kind, evidently a relic only of the latest period at which the modern village needed or was worth the protection of a gate. The wall here appeared to run due N. and S. Passing into the old city, a jungle path to the North West brought us to the present village of Tagoung, containing by the Thoogyee's account about one hundred houses, which is apparently correct. I called on this official, and found him civil and willing to give me all the information he could, which was not much. At my

request he drew a plan of the two cities on a parabeit. He confessed, however, that he had not seen the greater part of the wall, and especially did not appear at all certain about old Pagan. On the authority of "they say" however, he drew outlines like the following. (Pl. I.)

As my subsequent inspection rather confirmed this sketch, I give it to serve as a plan for reference.

The Thoogyee with the help of some of the numerous visitors I had attracted to his house, told me that anciently the two cities were surrounded by the river, an arm of which embraced the east sides and rejoined the main stream to the south of Pagan. The remains of this branch of the river he declared to be evident in the creek to the north of Tagoung, and in the fact that during the freshes of the rainy season, the two cities are actually surrounded by running water.

The walls of Tagoung he said followed the water-course, and those of Pagan too were only at a short distance from it. "In the rains, in fact, the two cities form the only dry ground in the neighbourhood." To the eastward a series of jheels and tanks are scattered through the jungle till, at the distance of a deing (two miles) or more, a small lake is met with, extending eight miles from N. to S. and six from E. to W. Beyond this lake is jungle, till the hills that run down from Momest are met about another deing further east.

All united in saying that Pagan is older than Tagoung, and all declared themselves ignorant of its history. "Its chronicles are all burnt," said one: another more intelligently remarked;—"It is not hundreds, nor even a thousand years that the city has ceased to be a capital: before religion came to the country it was the Burman capital, and what old man can tell us of its history?" On my enquiring after any stone inscriptions or other relics of antiquity, they said none have been found except a few small Budh images stamped in relief on bricks with an inscription beneath, that I might perhaps be able to read, but that they could not. They told me that these are all found on the ground within old Pagan, and nothing of the kind has been met with within the walls of Tagoung.

The Thoogyee sent for some pieces, and on examination the character proved to be Nagari, which I recognised, but cannot read when distinct, and this inscription was far from legible.

Taking temporary leave of the Thoogyee, I went through a wide

gap in the north wall, which seemed mostly levelled with the ground of the city, though its site is plainly marked by the brickwork, and found myself on the steep bank of the creek mentioned by the Thoogyee. Looking northwards, a long stretch of gradually narrowing water appears at last to end in a cul-de-sac amidst dense jungle. This is evidently an old passage, and at present an open one in the rainy season. To the right, close along the wall of the city, stretched a piece of low jungly ground, through which a small stream of water issued into the main creek. I went along this north wall till jungle and approaching darkness stopped me. The line of brickwork was plain enough, and close outside it, the ground sloped to the low swampy jungle which the natives said is covered with deep water every summer.

The present village, I should explain, is situated on the north-west corner of the old city: one or two old pagodas are near and several modern ones. The chief object of reverence to fear, however, is a Nat, which is said to possess great power for evil as well as good, and especially inflicts the stomach-ache on any offender. The material representative of this spirit is a rude head on a post, the whole of wood, about four feet high, with a tapering head-dress, half globes for eyes, a well formed nose and no mouth, but rather big ears. This dreaded image is lodged in a wooden shed like a Zayat, a portion of which, covered by an extra roof, is boarded off into a chamber about six feet square: within this stood the ugly post, amidst earthen vases and little pans in which flowers and lamps had been offered to it. As sketched from memory the outline of the thing was as below. (Fig. 1.)

I have heard of this terrible nat at Mandalay, and have been consulted by a former Thoogyia for an incurable stomach-ache and asthma inflicted by it while he was in office here. The nat bears a bad reputation for vindictiveness and being easily offended. The origin of this particular worship at this spot, I will enquire further into before I make any guesses. In the evening I witnessed a striking example of the reverence the nat exacts from all comers to his neighbourhood. My Burman servants had evinced some fear in the day and refused to accompany me in a close inspection of his devilship. At the puey given by the Thoogyia in the evening, the actors in which were a company of players from *Moutshobo*, I noticed these latter always making a shiko to somebody I could not see, before



Fig. 1.

they made the customary one to the entertainer himself. On the constant repetition of this I asked "Who is it they shiko to?" and was told by the Thoogya, "to the Lord nat," and then recollected that the nat shed stood in the direction of the obeisance which had puzzled me.

The inhabitants even dared to tell me that the nat was "teg sothe," very wicked, but in a confidential manner, as if they would not at all like the nat to know they said so.

The next morning, February 4th, was so foggy that I could see nothing. After despatching some letters, by a chance but safe opportunity to Mandalay for posting, I went on shore about 10 A. M., detaining the canoe, and sending on the large boat. I went to the Thoogya who had collected half a dozen of the brick reliefs, all that the village possessed, from which I selected three, and with the ready consent of the Thoogya brought them away. I then started for Pagan, and the Thoogya determined to accompany me. We passed out by a gateway in the east wall, north of that by which I had entered yesterday—where the direction of the wall was N. E. and S. W., and after walking through jungle in a southerly direction

for about half or a third of a mile, entered old Pagan by a pathway passing over a low ill-defined ridge, which the quantity of brickwork in the soil, as well as the assertions of the Thoogyee and followers, made evident as the north wall of old Pagan. To the west and east the same ridge could be seen to extend, but could not be followed for more than a few yards on account of the thick and prickly jungle. About sixty yards to the south, we came on a mass of brickwork, apparently an old pagoda, on which was a rude Budh protected by a modern though dilapidated shed, and with its back against the remains of the original Dzedi. There was nothing peculiar about it, but by the image were several of the brick casts above mentioned, but of a different stamp from those the Thoogyee had shown me at his house. The inscription was here more distinct, and, like the others, in the Nagari character. The Thoogyee permitted me to take the two most perfect. Continuing south for about 500 yards through dense jungle, the narrow path led us to a round pile of bricks overgrown with brushwood and grass, the ruin of a conical pagoda called by the people the "Mwy Zeegoon Phra." We climbed its almost perpendicular side by a path already worn, and from the top, could see how utterly the site of both cities was converted into forest and jungle. The walls could not be traced even in the faintest manner. The low ground to the east, however, was plainly outside the city. Several spots within had been used for "Toungya" cultivation: none had been otherwise made use of. Returning by the same path, for further progress southwards was barred, I got the best of the natives to accompany me to the eastwards, where he said the north-east corner of the city was apparent. We must have wandered through cartways and jungle paths about half a mile to the eastward before we came upon the supposed corner. To the westward I could not trace the wall, but straight to the south we traced distinctly the high brickwork for fully half a mile. To the right was impenetrable jungle the whole way, to the left low ground with occasional patches of forest, and much of the long feathery grass, which only grows in places well watered. This low land, the man said, is covered by water in the summer, and at that time there is a current all along by the wall.

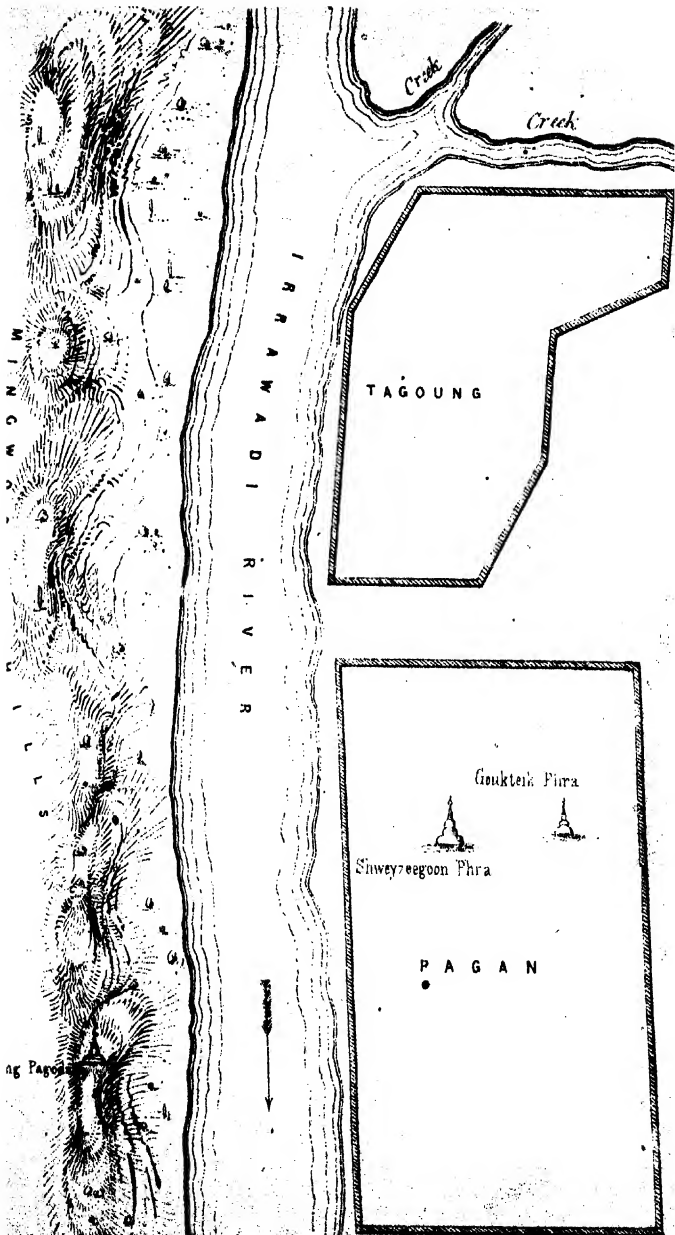
The jungle defied further progress. The guide said that the wall continues straight on southwards for twice the distance that we had come. We now passed through an ordeal of many scratches, and

struck upon a path within the walls, running south-west. Keeping this general course, we walked I think a mile and a half, and emerged over a line of brickwork on the same level with the top of the sandstone bank, and about a dozen yards within it. Now on the bank of the river I could not afford time to follow the wall line southwards, but from a good mark, (a large tree on the lower bank opposite the gap in the true bank,) I measured with a tape the distance to the apparent north-west corner of the city. This was 104 times 50 feet, or 5200 feet. From this it appears that the natives' account is probably correct, and that the city of Pagan was at least two miles in length from north to south, and probably a mile in breadth from east to west. A thousand feet from the supposed north-west corner of Pagan begins the west wall of Tagoung. This runs directly north for 24 times 50 = 1200 feet, then turns with the bank of the river to the north-east for 500 feet, from which the north wall is apparently continuous along the creek in a due eastward direction. The west wall of Tagoung is evidently a brickwork capping to the natural sandstone bulwark, and thus appears to be parallel with, but somewhat to the west of the west wall of Pagan, which lies behind the natural bank.

The whole was very probably an island in remote times, and it seems that insular or semi-insular positions have been favorite sites for Burmese capitals; *e. g.* "Poukkan" or Lower Pagan on "Yunhlot" Island, Ava, and this the most ancient of all.

The Thoogyee who had left me after showing the Mwy Zeegoon Phra, now came down to the beach, and seemed a little puzzled at my measuring the old walls. His face bore a queer expression of doubt whether he had not committed a sin in allowing this perhaps dangerous proceeding. He, however, spoke very civilly, and we parted the best of friends, he promising me all the information procurable, on my return. It was now 4 o'clock, and a very cold pull it was to reach the boat, which I found about 8 o'clock, moored beneath the bluff of Tongue, about eight miles up the river. This Tongue is said to have been a capital before Tagoung. Again near Myadoung is a place "Thigine" on the west bank, called the Beloo Myo or Monsters' city, where *the walls are of stone*, and other evidences of superhuman handiwork are talked of. This must be of interest.

I fancy that in former times there were several petty states in the upper Irrawaddi valley, and that the Burmese chroniclers have merely



selected one at a time, and stringing backwards the genealogy of their modern kings, manufactured the tale of a continuous monarchy with a shifting capital and dating from the first inroad of Hindoo princes into the valley up to the present time. I understand from Hindoos that they have in their books some accounts of an incursion of Hindoos into this country.

The ancient extent of Hindoo influence over Indo-China and the adjacent archipelago, I suppose to be a well-proved fact, and the prominence given in Burman chronicles to the advent of the Hindoo prince is very significant.

I should have mentioned above, that the great extent of pond and lake, with the creeks of still water, make Tagoung a remarkably good fishing-place. Great quantities of fish are dried, and much made into "ngapee" and great numbers also are taken alive to the capital. The small-fish are thrown into the boat and kept alive with frequent changes of the water. The larger fish are strung by the gills, or the nose, or the lip, and so towed down the river till the market is reached. At the time of my visit, the cul-de-sac creek to the north of the city was closed at its mouth by a bamboo netting, and the fish above were being narcotised with some bark, that I am as yet unacquainted with. The fish above the net being all taken, the net is removed, when after five or six days, fish enter the creek again and the process is repeated. At this creek and on the river in the neighbourhood of Tagoung, the fish-eating birds are particularly numerous. A few specimens I have shot and had skinned; among them the Scissor-bill (*Rhimops nigra*) and another very handsome web-footed bird of the size of a duck, with a long neck and a sharp pointed beak. It swims with only its head and neck out of the water, but watches for its prey most generally on the low sand banks, or on some projecting piece of drift wood. Its food is small fish. The Darter.

Note on the Gibbon of Tenasserim, Hylobates lar.—By Lieut.-Col.
S. R. TICKELL; in a letter to A. GROTE, Esq.

I send a transcript from my Mammalian collection of what I had recorded of *Hylobates lar*, at least of its wild and tame habits. Notes on its osteology and soft anatomy and structure, you will not require, as you have a specimen by you, which I suppose from what you say of its paralysis will not live long. The one you have, must have been about 1½ year old when I sent it you. Doubtless captivity has checked its growth. I give the dimensions taken of an adult one, but I think I have seen them larger, and the males are larger than the females, (as in all monkeys).

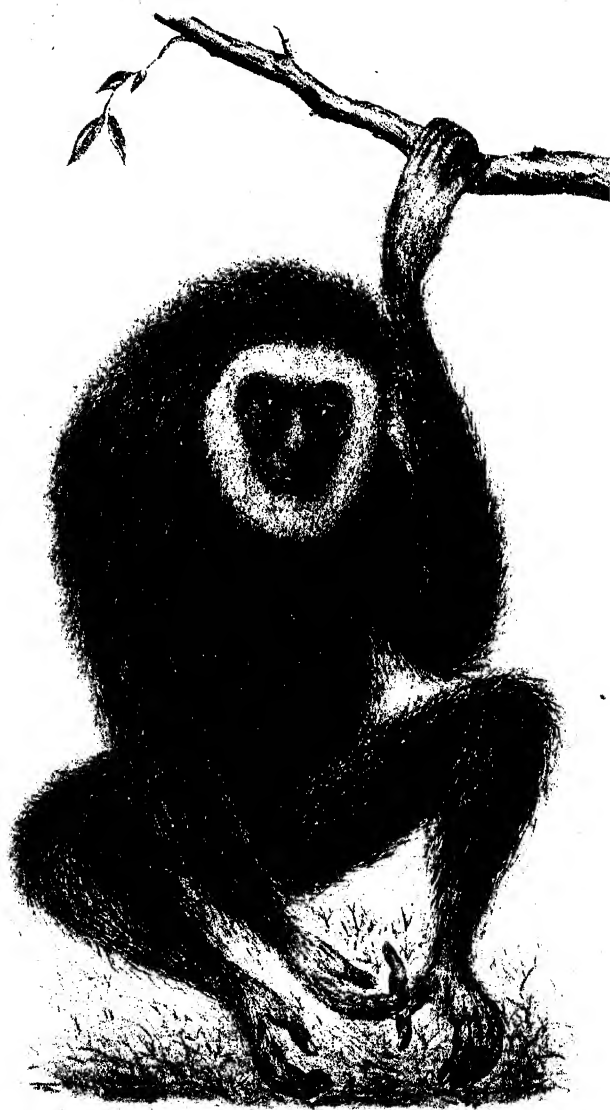
The Burmese and Talains never keep monkeys of any kind as pets. The Karens sometimes do. Of the Shans I cannot speak, but being Buddhists they probably do not either.

HYLOBATES LAR (Ogilby.)

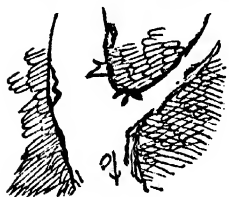
The *Hylobates lar* is found in great abundance in all the forests skirting the hills, which run from north to south through the province of Tenasserim. They ascend the hills themselves up to an elevation of 3,000 to 3,500 feet above sea level, but not higher, and are usually met with in parties of from 8 to 20, composed of individuals of all ages. It is rare to see a solitary one; occasionally, however, an old male will stay apart from the flock, perched on the summit of some vast tree, whence his howls are heard for miles around. The forests which these animals inhabit, resound with their cries from sunrise to about 9 A. M. Their usual call may be thus rendered.



The sounds varying from the deep notes of the adults to the sharp treble of the young ones. During these vocal efforts they appear to



resort to the extreme summits of the loftiest trees, and to call to each other from distant parts of the jungle. After 9 or 10 A. M. they become silent and are engaged feeding on fruit, young leaves, buds, shoots and insects, for which they will occasionally come to the ground. When approached, if alone, they will sometimes sit close,



doubled up in a thick tuft of foliage, or behind the fork of a tree near the top, so screened as to be quite safe from the shot of the sportsman. The sketch in the margin may show how effectually a single gunner may be baffled in his attempts to secure a specimen. With a companion the

manœuvre of course is useless. But indeed when forced from its concealment and put to flight, the Gibbon is not easily shot. It swings from branch to branch with its long arms, shaking the boughs all around, flings itself from prodigious heights into denser foliage, and is quickly concealed from view by intervening trees.

If hit, there is no animal more tenacious of life, and its efforts when desperately wounded to cling to the branch, and drag itself into some fork or nook where to hitch itself and die, excite amusement and compassion.

The Gibbon (if we restrict that name to this species) is not nearly so light and active as its congener *H. hoolock*, (the "Tooboung" of the Arakanese,) which latter species is not liable to vary in colour, being always black, with the hands and feet concolorous, and the supercilia only white, instead of a circle of that colour all round the face. The Gibbon, moreover, walks less readily on its hind legs than the hoolock, having frequently to prop and urge itself along by its knuckles on the ground. In sitting it often rests on its elbows and will lie readily on its back. Anger shows by a fixed steady look; with the mouth held open and the lips occasionally retracted to show the canines, with which it can bite severely, but it more usually strikes with its long hands, which are at such times held dangling, and shaken in a ridiculous manner, like a person who has suddenly burnt his fingers. It is, on the whole, a gentle peaceable animal, very timid and so wild as not to bear confinement if captured adult. The young seldom reach maturity when deprived of liberty. They are born generally in the early part of the cold weather, a single one at

a birth, two being as rare as twins in the human race. The young one sticks to its mother's body for about seven months and then begins gradually to shift for itself. So entirely does this animal confine itself to its hands for locomotion about the trees, that it holds any thing it may have to carry by its hind hands or feet. In this way I have seen them scamper off with their plunder, out of a Karen plantain garden in the forest.

I have had many of these animals while young in confinement. They were generally feeble, dull, and querulous, sitting huddled upon the ground, and seldom or never climbing trees. On the smooth surface of a matted floor they would run along on their feet and slide on their hands at the same time. By being fed solely on plantains, or on milk and rice, they were apt to lose all their fur, presenting in their nude state a most ridiculous appearance. Few recovered from this state: but a change of diet, especially allowing them to help themselves to insects, enabled some to come round, resuming their natural covering. For the most part they were devoid of those pranks and tricks which are exhibited by the young of the *Macacus* and *Inuus*, though occasionally and if not tied up, they would gambol about with cats, pups, or young monkeys.

The tawny and the black varieties of the Gibbon appear to mix indiscriminately together. The Karens in the Tenasserim provinces consider there is a third variety which they name "Khayóo pabá," and the Taláins "Woot-o-padyn" (blue ape). This is probably the party-coloured or mottled phase of the animal, which occurs very often to the southward, in Malacca. The pale variety is more numerous in the district of Amherst than the black one.

Hylobates lar extends southward to the Straits, and northward to the northerly confines of Pegoo (British Burma): whether it is found throughout Burma proper or not, I cannot ascertain. To the west of the spur dividing British Burma from Arakan, and throughout the latter province into the mountains east of Chittagong, is found only *Hylobates hoolock*. And further northward in the forests and hills of Cachar, Munnipoor and Asám exists either a third species, (not yet I believe distinguished by naturalists,) or if the same species as *H. hoolock*, so strongly modified as to be larger and stouter, with a totally different call, and subject to vary in colour the same as *H. lar* which *H. hoolock* in Arakan is not.

I subjoin the dimensions of an adult male specimen of *Hylobates lar* shot near Hlyng bway, Tenasserim province; January, 1855. But I believe it attains a larger size.

Length from crown to posteriors 1' 7 $\frac{1}{8}$ "

Humerus 9 $\frac{1}{2}$ ', Radius 9 $\frac{1}{2}$ ", Hand 6'', Total 2' 1''.

Femur 7 $\frac{1}{3}$ ", Tibia 7 $\frac{1}{4}$ ", Foot 4 $\frac{1}{2}$ '. Total 1' 7 $\frac{1}{2}$ ".

Height when standing upright about 2' 6''.

I should not omit mentioning the peculiar manner in which this species drinks, and which is by scooping up the water in its long narrow hand, and thus conveying a miserably small quantity at a time to its mouth. It is to be hoped the animal is not much troubled with thirst.

LITERARY INTELLIGENCE.

*Extrait du mémoire de MR. HOLMBOE sur l'origine du système de poids de l'ancienne Scandinavie.**

Pendant que le système de poids de l'ancienne Rome, constituant la livre de 12 onces était en usage dans une grande partie de l'Europe, la Scandinavie se servait d'un système tout différent, comptant 1 mörk (plûtard dit marc) = 8 asrar (plur de cyrir, plûtard dit öre).

1 eyris = 3 örtugar ou ertugar (plur. de örtug).

On est frappé de rencontrer le même système en usage dans l'Inde méridionale moderne, ou,

1 çer est = 8 palas.

1 pala = 3 tolas,

et plus frappante encore est l'égalité de la pesanteur des poids respectifs des deux contrées si éloignées l'une de l'autre. L'auteur donne deux listes de la pesanteur de l'once (cyrir, pala) dans divers états de l'Europe et de l'Inde, d'où il résulte, que sa pesanteur, quoiqu'un peu variante, se trouve presque entre les mêmes bornes ici et là, ce qui est aussi le cas avec l'once de plusieurs états Mahométans hors de l'Inde.

Il est vrai que, depuis le moyen âge, le marc de 8 onces a été en usage dans la plupart des états Européens; mais il faut remarquer, que l'on n'y s'en sert que pour peser l'or, l'argent et un nombre très limité d'autres articles précieux, pendant que la livre de 12 onces

* Communicated in a letter to Babu Rajendra Lal Mitra.

est le poids principal pour les vivres et les marchandises. Les Scandinaves au contraire se servent du marc, eyrir et ertag pour tout objet pondérable ; et la division de l'once en 3 unités inférieures ne se rencontre nulle part hors de Scandinavie et de l'Inde.

L'auteur a fait des recherches pour trouver des traces du système des Scandinaves dans les contrées, qu'ils passaient lors de leur émigration de l'Asie, et par lesquelles un chemin de commerce très fréquenté entretenait les relations entre l'Orient et le Nord jusqu'à l'invasion des Tartares. Le résultat de ces recherches se borne à attirer l'attention sur un grand nombre de lingots d'argent, qu'il y a une trentaine d'années ont été desenterrés à Riazan, presque au centre de la Russie. Or le poids moyen de ces lingots répond de très près au poids du marc ancien des Scandinaves. Et à Bokhara on se sert aujourd'hui d'une once, dit Tolendak, dont le poids est presque égal à l'ancien eyrir.

Quant à l'origine de l'égalité des poids du Nord et de l'Inde, l'auteur émet l'hypothèse, que le système a été établi chez les ancêtres communs des Ariens de l'Inde et des peuples du Nord. Pour supporter cet hypothèse il cite un certain nombre d'articles de civilisation, qui portent les mêmes ou presque les mêmes noms en Scandinavie et en Inde,—articles qui démontrent un degré de civilisation, qui doit nécessairement avoir eu besoin d'un système de poids. Les émigrés doivent donc l'avoir apporté avec eux, les uns vers le Nord, les autres vers le Sud.

Translation.

Extract from the Memoir of M. Holmboe on the origin of the System of Weights in Ancient Scandinavia.

While the system of weights of ancient Rome, comprising the pound of twelve ounces was in use in a large part of Europe, Scandinavia used a very different system, consisting of

1 mörk (afterwards marc) = 8 asrar (plural of eyrir, afterwards called öre),

1 eyrir = 3 örtugar or ertugar (plural of örtug).

One is struck at meeting with the same system in use in modern Southern India where

1 sir = 8 palas,

1 pala = 3 tolaks,

and still more striking is the equality of the respective weights, in two countries so far distant from each other. The author gives two lists of the weight of the ounce (eyrir, pala) in the different states of Europe and India, from which it appears, that although its weight varies somewhat, the variation has almost the same limits in both quarters, which is also true of the ounce in several Mahometan states external to India.

It is true that the marc of 8 ounces has been in use in most European states since the middle ages: but it must be remarked that it is only employed there for the weighment of gold, silver, and a very limited number of other precious articles, while the pound of 12 ounces is the chief weight for provisions and merchandise. The Scandinavians on the contrary use the marc, eyrir and ertag, for every weighable object; and the subdivision of the ounce into 3 units of lower value, is met with nowhere but in Scandinavia and India.

The author has sought for traces of the Scandinavian system in the countries which that people traversed in their emigration from Asia, and through which passed a well-frequented commercial route, by which Eastern and Northern nations communicated, up to the time of the Tartar invasion. The result of these researches is limited to drawing attention to a great number of ingots of silver which were dug up at Riazan, almost in the centre of Russia; the weight of these ingots corresponds very closely to that of the ancient marc of the Scandinavians: and at Bokhara, according to Tollendak, an ounce is still in use, the weight of which is almost equal to that of the ancient eyrir.

As to the origin of this equality in the weights of the North and of India, the author suggests that the system was established by the common ancestors of the Arians of India and of the Northerners. In support of this view, he cites a certain number of articles of civilization which bear the same names in Scandinavia and India,—and which indicate a degree of civilization which must have absolutely required a system of weights. The emigrants then carried this with them; some to the North, the others to the South.

Dr. E. BUEHLER on Çâkaṭâyana's Sanskrit Grammar.

I lately received through the kindness of my friend Mr. W. Stokes of Madras, part of a transcript of MS. 1071 (Alph. Cat. E. T. H. Col.) as well as the beginning and end of MSS. 1072 and 1073, which in the *Catalogue raisonné* as well as in the Cat. Alph. are stated to contain the ancient grammar of Çâkaṭâyana, the predecessor of Yâska, Pânini and the author of the Mahâbhâshya.

On examination, MS. 1071 proves to contain a copy of the Çabdânuçâsana of Çâkaṭâyana with the Chintâmani Vritti of Yaxavarman (beginning on fol. 31 of the original MSS., p. 149 of my transcript). The first thirty-one folios contain a compendium based on the same work, in the style of the Siddhântakaumuḍi. Its author and title I am unable to ascertain, as it is full of breaks in the beginning and in the end. MS. 1072 contains a work called Prakriyâsamgraha by Abhayacandra-siddhânta-sûri, likewise giving sûtras from the Çabdânuçâsana, but if it is commentary or an abridgment of the original I cannot say. MS. 1073 resembles closely MS. 1072; its title and author are not named.

Though I only possess about 1½ pâda of the first adhyâya of the Çabdânuçâsana I venture to give a notice of the work without waiting for the completion of the transcript, as I think it can be proved satisfactorily, that that work really belongs to the predecessor of Pânini. Besides, the above-mentioned compendium allows me to form a general idea of the whole work.

In order to prove the correctness of the title given, I give the text of the introductory verses of the Chintâmani :

Vitarâgâya namah.

Çriyam kriyâdvah sarvajñânajyotira naçvarim.

Viçvam prakâçay-accintâmaniçcintârthasâdhanah. (1)

Namastama(h) prabhâvâbhîbhûtabhûdyotahetave.

Lokopakârîṇe çabdabrahmaṇe dvâdaçâtmane. (2)

Svasti çrisakalajñânasâmrâjya, padamâptavân.

Mahâçramana-samghâdhipatir-yah çâkaṭâyanaḥ. (3)

Ekâ ççabdâmbudhimbuddhimanthareṇa pramathya yah.

Sayaçah çvi samuddadhre viçvam vyâkaraṇâmrîtam. (4)

Svalpagantham sukhopâyam sampûrṇam yadupakramam.

Çabdānuçāsanaṁ sârvam arharcchâ sanvatparam. (5).

Eshṭirneshtâ na vaktavyam vaktavyam sūtratāl prithak.

Samkhyâtam nopasamkhyānam yasya çabdānuçāsane. (6)

Tasyâtimahatim vṛttim samhṛityeyam laghiyasî.

Sampûrṇalaxaṇāvṛttirvaxyate yaxavarmanâ. (7)

Grantha-vistara-bhîrûṇām sukumâradhiyāmayaṁ.

Çuṣṛûshâdiguṇân kartum çâstre samharanodyamah. (8)

Çabdānuçāsanasyaḍ nvarthâyâç cintāmane ridam.

Vṛtteri granthe pramāṇantu shatsahasram nirûpitam (9)

Indracandrâdibhiççâbdair yaduktam çabdalanāṇam

Tadilâstisamastam ca yannehâsti na tatkvacit. (10)

Gaṇadhâṭupâṭhayor gaṇadhâṭu lingānuçāsane lingagatam.

Unâdikâ nuṇḍau çesham niççeshamatra vṛttau vidyât. (11)

Bâlâbalâjanopyasyâ vṛtteri abhyâsavṛttitah.

Sainastamvâṅgmayam veti varshenaikena niçcayât. (12)

With these statements we must compare the end of the first chapter, which runs as follows :

Iti çabdānuçāsane cintāmanivṛttau prathamasyâdhyâyasya prathamah pâdali.

Though there can be no doubt that the MS. contains the work of Çâkatâyana, still it remains to be proved that this Çâkatâyana is the predecessor of Pânini. For the name Çâkatâyana is a *nomen gentile* and does not originally designate one individual only. Besides we know from the commentaries on the Dhatupâṭha that there were two grammarians of this name.

Fortunately it is not difficult to decide this question, as Pânini quotes in three passages opinions of Çâkatâyana,—pûjârtham as the commentators say. Two of these rules are found in the fragment of the Çabdānuçāsana, which I have before me, the third is wanting because it refers to a matter treated of in one of the later books. The rules referred to are the following :

Pânini teaches viii. 4. 46.

Aco rahâbhyâm dve (scil. yare vâ).

Consonants with the exception of *h* (and of course also of *r*) standing after an *r*, or *h*, which is preceded by a vowel or diphthong, can, optionally, be doubled.

And viii. 4. 47.

Anaci ca.

(This doubling may also take place) if consonants except *h* and *r*, which are preceded by a vowel or diphthong, are followed by any letter except vowels, diphthongs *h* or *r*, (or if they stand at the end of a word).

In the following Sûtras he gives exceptions to these rules and says S. 50.

Triprabhṛtishu çâkaṭa'yanasya (na syât).

If three or more consonants follow each other (which otherwise fulfil the conditions stated above) the doubling shall not take place according to the opinion of Çâkaṭâyana, c. g.

Çâkaṭâyana allows only the pronunciation *indra*, not *inndra*.

In the Çabdânucâsana we find the following corresponding rules :

I. 1, 117.

Acchrohrahacah, (dve vâ syâtâm) Cintâmaṇi : Acah paro yo hakâro repḥaṣṭa tâbhyâm parasya ahracah, hakârâdrephâdacaçcânyasya varuasya sthâne dve rūpe bhavato vâ, brahmâmâ brahmâ, sarvvah sarvah, dirgghah dirghah, ahraca iti kim, barhit, dahrah aham.

Translation of the Sûtra :

Consonants except 'h' or 'r' following an 'h' or 'r,' which is preceded by a vowel or diphthong, may optionally be doubled. *

Sûtra I. 1. 118.

Adirghât.

Cintâmaṇi :

Adirghâdacaḥ parasyâ hracah-sthâne dve rūpe bhavato vâ, dadhyatra dadhyatra, patthyodanam pathyodanam, tvakk tvak, tvagg tvag, go-nu-ttrâtaḥ go-nu-trâtaḥ, anvityadhikârât (from Sûtra 115 çaronu dve) kutvâdau kutve dvitvam, adirghâdeka halityanuktvâ na samyage (Sûtra 119) tvacîti (Sûtra, 101) yogadvayârambhât, virâme pyayamâ-deçah ahraca iti kim sahyam, (?) varyyah, ayyah titau, adirghâditi kim, sūtram, pātram, vāk.

Translation of the Sûtra :

Consonants except *h* and *r* preceded by a short vowel and followed by any letters (except those specified in the following rules) or *Virâma*, may optionally be doubled.

Sûtra I. 1. 119.

*Na samyage.**

Cintâmaṇi.

Halonantarâh samyagah, samyage pare ahracah sthâne dve rûpe na bhavatah, indrah, (kr̥itsnam.)

Translation of the Sûtra :

If consonants except *h* and *r* are followed by a group of consonants, the doubling does not take place.

The last Sûtra apparently contains the opinion ascribed to Çâkaṭâyana by Pâṇini in his rule VIII. 4. 50. At the same time it must be observed that Pâṇini says in VIII. 4. 52.

Adirghâdâcâryânâm,—All the Açâryas forbid the doubling of a letter preceded by a long vowel, and that Çâkaṭâyana who must be regarded as one of the Achâryas teaches the same thing in the Sûtra 118 just quoted.

The second passage occurs Pân. VIII. 3. 18. After having taught VIII. 3. 17. that the Visarga must be changed to *y* after a penultimate 'a,' 'â' and 'o' in the words aghah, bhoh, bhagah he (VIII. 3. 18.) continues.

Vyor laghuprayatnatarah Çâkaṭâyanasya and *v* and *y* (following *a*, *â* or *o* in the three words mentioned) are to be pronounced with less effort (movement of the tongue) than usually—according to the opinion of Çâkaṭâyana.

Çâkaṭâyana's sûtra, I. 1, 154, contains precisely the same rule.

He teaches I. 1. 153.

Vyoshyâ gho bho bhagoh, (scil. gluk).

Cintâmani.

Avarnâdagho bho bhago etyetebyaṣṭa parasya padântasya vakârasya yakârasya câshipare gluk bhavati (gluk supplied from sûtra 152), vrixâ hasati (?) vrixavriçcamâ caxanovriçca (?); devâ yânti; agho hasati, bho dadâti, bhago dehi; padânta iti kim, gavyam, jayyam, bhavyam.

Translation.

A final 'v' and 'y' following a short or long 'a,' or the words aghoh, bhoh, bhagoh, must be elided before soft sounds (vowels, diphthongs and soft consonants).

Sûtra I. 1. 154.

Acyaspashtaṣṭa, (gluk).

Cintâmani.

Avarnâd-aghoh-bho-bhagobhyaṣṭa paryoh padântantayorvyoraci pare glukaspashtaṣṭah avyaktaçruticâsanno bhavati, paṭau paṭav'*u, tau tay'*u,

agho u aghoy'*u, agho atra aghoy'atra, bho atra bhoy'atra, bhago atra bhagoy'atra, gluci gita iti sandhipratishedhah.

Note.—In the cases marked by * the MS. has *y* and *v* instead of *y'*, *v'*.

Translation.

And if *v* and *y* (in this position) are followed by a vowel or diphthong, then the elision is not clearly audible; (i. e. the pronunciation of the *v* and *y* is unarticulated and the letters are hardly audible).

I add the explanation of the word *aspaṣṭah* given in the above-mentioned compendium. There we read :

...aspaṣṭah aspaṣṭaṣṭuthi praṣṭhila sthānakaraṇapariṣpandaṣṭa āsanah vakāro yakāraṣṭa.....

Again it must be observed that Pāṇini says VIII. 3. 22. hali sarveshām—All the (old) grammarians prescribe the loss of such a *v* and *y*, if it is followed by consonants; and this rule is certainly contained in Çākāṭyana's Sūtra, I. 1, 153.

After this, I think, there can be hardly any doubt that the author of the Çabdānuṣāna was the predecessor of Pāṇini.

But, in order to make doubly sure, I will adduce another proof for this relation, which seems to me to be still more conclusive.

Pāṇini teaches V. 2. 124 : vāco gmini.

The word *vāc* takes the affix *gmini* (in the meaning of *matu*).

The Calcutta Pandits who prepared the first edition of Pāṇini understood the Sūtra so, that the real form of the affix was *gmin*, and consequently formed the monster *vāggmin* (with double *g*). They even misled Dr. Boethlingk (see his note to the Sūtra). Benfey* and Aufrecht† understood the Sūtra rightly and formed *vāgmin*. The latter form alone occurs in literature, and is the only correct one. The obscurity of the Sūtra is caused by Pāṇini's negligence. He has omitted to state that the letter 'g' is prefixed to *min* only in order to indicate that the final of *vāc* does not become nasal, as it ought, according to the Sandhi rules. He has taken the Sūtra, with a slight alteration, from Çākāṭyana's grammar, where according to the Compendium, it is read thus : vāco gmin.

It is perfectly intelligible in Çākāṭyana's system, as there a prefixed 'g' constantly means "no Sandhi." The author of the Compendium says in commenting on the Sūtra :

* Vollst. Sankt, gr. aff. min.

† Uṇādisūtras glossary s. v. vāgmin.

Gakâro-nunâsikanivṛittyarthah.

The letter 'g' is put in order to forbid the nasal.

On other occasions Çâk. forms gluk (g + luk) in order to indicate an elision which causes hiatus, e. g. in devâ âyânti for devâh âyânti. (See the above Sûtra I. 1. 153 and the Cintâmaṇi thereon). Here we have a clear instance, where a Sûtra of Pânini presupposes the existence of the system of Çâkaṭâyana.

For an abstract of the contents of the first and second half-pâda of the first Adhyâya I must refer to the Journ. B. B. R. A. S. Here I must content myself with saying that they contain Samg'nâ, Paribhâshâ, Sandhi rules, and the beginning of the declension.

From a comparison of these rules with the corresponding ones of Pânini as well as other parts occurring in the Compendium, it can be clearly established that Pânini's grammar is a very much *amplified and corrected edition* of Çâkaṭâyana's, and by no means what we should call an independent and original work.

A great many technical terms and names of affixes and roots he has directly borrowed from his predecessor: e. g.

1. Technical terms.

Yuvan, vridhha (which Pânini uses *sometimes* for gotra, upasarga, avyaya, taddhita, kṛit, dīrgha, pluta, hrasva, nap, sup, dhātu, pratyaya, ghi, ghu, etc.

2. Affixes.

Vatū, dati, çnâ, çap, çī, űgī, dâc, evi, jhi, çatri.

3. Roots.

Kriñ. The commentaries give the roots, as far as I have observed, *always* in the same forms as Pânini. The part of the text before contains no other roots than kriñ. As Çâkaṭâyana's Dhâtupâṭha is in existence, I hope to be able hereafter to give further details on the subject.

4. The Gaṇas resemble very closely those of Pânini. In the Compendium I find the Gaṇa svarâdi at full length, and it is nearly the same as that given by the Calcutta Paṇḍits in their edition of Pânini, except that it comprises also the gaṇa prâdi. Besides I find the gaṇas űryâdi and sâxâdâdi mentioned in Çâkaṭâyana's grammar. The Gaṇa pâṭha belonging to Çâkaṭâyana's Çabdânucâsana is said to be in existence.

Besides many entire Sûtras have been borrowed by Pânini from his

predecessor, e. g. Tirontardhau I. 4. 71. ugádayo bahulam, III. 3. 1. nirvánováte, VIII. 2. 50. etc.

One of the questions, connected with this book, which will perhaps excite the greatest interest is, whether Çákaṭáyana really was a Jaina or Bauddha, as we are led to think on account of his title maháçramanasamghádhpati "moderator of the convention of the great Çramanas." The word samgha—"convention"—shows, that he belonged either to the Bauddhas or Jainas, and his commentators, who are all Jainas, of course desire to show that he was of the latter persuasion.

I cannot venture to express at present any definite opinion on the subject. But I believe that Çákaṭáyana was *not* a Brahman, and should not be at all astonished, if it were established by additional evidence, which I hope will soon come into my hands, that he was a follower of Çákyamuni.

Extract from a letter from L. BOWRING, Esq., dated Bangalore, 22nd March, 1864.

I may take this opportunity of mentioning that the Malnáḍ or hill portion of Mysore through which I have recently marched, possesses a great number of inscriptions, some of the Anagerudi dynasty, others of the Kaḍamba Rajas, and others again of the Skêri House who ruled these wild tracts up to the time of Hyder Ali. The inscriptions are, with very few exceptions, in what is called Hale Kannaḍa or old Canarese, and are read with difficulty. They are invariably on large slabs placed upright in the ground, and generally with no protection from the weather. A great many of these inscriptions were copied and sent to Bengal by Dr. Buchanan, who visited Mysore under orders from Government in the beginning of the century and wrote a very interesting account of his tour, in three volumes. Mr. Walter Elliot also, of the Madras C. S., collected a great number of these inscriptions, but I do not know whether the results of his labours were communicated to the Society at Calcutta. I purpose some day, if I can secure the services of a qualified copyist, to have all that can be found in the country copied systematically.

The most interesting traces of ancient time that I have seen in the Malnáḍ are those of the Jain sectarians. Formerly there was a noted dynasty of Jain Rajas, called the Belál Rai Rajas, who ruled both above

and below the ghâts, their head-quarters being at Halebid where there is a splendidly carved temple. It is fifteen miles from Hassan. These Jain Rajas fell before the followers of Shankar Achârya and the Vaisnavas about 800 years ago, the last Jain Raja having deserted his faith and become a believer in Vishnu, taking the name of Vishnu Vardhana. The head of the Smârtas, the Sringagiri Swami, is now supreme in the Malnâd country. However, Jains are still found in great numbers, and, in the remoter parts, the Heggades or Potails are generally of that faith, so that it is not unusual to find in a village a Jain Bastî, as the covered-in temples are called, with a large standing image of one of the twenty-four personifications. The present principal seat of the Jain religion is Srâvana Belgul, about fifty miles north of Mysore, where there is a colossal statue of Gomateshwar hewn out of the summit of a hill, and looking northwards over the country. It is about forty-five feet high, and, though too broad in the shoulder and arms, is a fine figure. The legs are dwarfed, owing I presume to the figure having been undertaken on so gigantic a scale, that great expense would have been entailed by carving the lower extremities down to their full length. In the "Bastî," in the centre of which this image stands, there are seventy-two figures about three feet high, all of black stone, representing the different attributes of the divinity, each on its own vâhana or vehicle. I incline to think that if the history of the Jains in the western part of Mysore were methodically taken up and investigated, it would be an interesting subject of research. There are few literate men in the hills; and the Brahmins are very ignorant regarding all inscriptions, as an instance of which I may mention, that when at Kalas, near the sources of the Tungabhadra river, I enquired whether there were in the Devasathan there any incised slabs, and was answered in the negative; but on visiting it in the evening, I found twenty-six stone Shâsanas in Canarese (one of Salivâhan 1132), one in Devanâgari and two on copper plates. This part of the country is, however, very wild, and, so far as I could ascertain, no European had been to Gangâmûl (the sources of the Tungabhadra) for twenty years before my visit. There is a proverb that the Kalas Mâgani (Taluk) is a country of 3000 pagodas, 6000 hills, and 12,000 devils. The scenery in it is very fine.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR MARCH, 1864.

The monthly general meeting of the Asiatic Society was held on the 2nd instant.

Dr. T. Anderson, Vice-President in the chair.

The proceedings of the last meeting were read and confirmed.

The annual accounts of the Society for 1863, were submitted.

It was proposed by Colonel Dickens, and seconded by Mr. Blanford, that the thanks of the Society be voted to the auditors for their labours in auditing the Society's accounts. The proposition was carried unanimously.

Presentations were announced—

1. From Lieutenant R. C. Beavan, a copy of "Westwood's Oriental Entomology."

2. From Baboo Prosonno Coomar Tagore, two copies of the *Dáyabhága* with six commentaries, published by himself.

3. From W. T. Blanford, Esq., Deputy Superintendent of the Geological Survey of India for Bombay, specimens of land crabs and a grouse.

4. From His Highness Hekekyan Bey, c. E., a copy of his treatise on Egyptian Chronology.

Colonel Guthrie exhibited a remarkably fine pair of Wapiti horns.

The Chairman announced that a deputation had waited upon the Right Hon'ble Sir John Lawrence, with the following address requesting His Excellency to become the patron of the Society, and that he had been pleased to accept the office in the terms of the subjoined reply.

ADDRESS.

“ TO HIS EXCELLENCY THE RIGHT HON'BLE SIR

JOHN LAIRD MAIR LAWRENCE, BART., G. C. B., K. S. I.,

Her Majesty's Viceroy and Governor-General of India.

“ On the part of the Asiatic Society of Bengal, we, its President and Members, respectfully solicit that your Excellency will be pleased to accept the office of patron of the Society.

“ Founded in 1784, by Sir William Jones, the Asiatic Society has, for 80 years, devoted its labours to the advancement of Asiatic science, whether that science be the record of the works of man, or the investigation of the phenomena and laws of nature. The history, literature and philosophy of India, the laws and customs of its people, the architecture of its ancient cities, and the languages and dialects of its numerous races of past and present time, have been largely recorded and elucidated by the labours of the many eminent men whom the Society has been proud to enroll as its members. On the other hand, the geography and physical structure of India and Southern Asia, the Fauna and Flora of this and neighbouring countries, their climatal phenomena and the physical laws of nature, to a knowledge of which modern civilization is so largely indebted, have equally been objects of the studious researches of the Society, and the numerous volumes of its publications, and the large and valuable collections in its museum, amply testify to the zeal and skill with which these objects have been pursued.

“ Furthermore in all questions bearing on the material progress of this country, the Asiatic Society has ever taken an active interest, and much valuable information on the mineral resources of India, on the geography and people of the frontiers, on the practicability of new trade routes, and similar matters directly affecting the wealth or intelligence of the country, has been amassed and recorded in the researches and journals of the Society.

“ To the co-operation of the Indian Government and the enlightened appreciation and sympathy of your Excellency's predecessors, the Governors-General and Viceroys of India, the Society has been in no small degree indebted for that measure of success which has attended its labours. The establishment of the geodesical, geological and

hydrographic surveys of India, and of botanic gardens under the superintendence of a series of able and accomplished men of science, the formation of an Oriental fund for the publication and diffusion of ancient Indian literature, the appointment of a Government archæologist, and the grant of pecuniary aid which the Asiatic Society has for many years past received from Government for the support and extension of its museum, bear ample witness both to the independent and co-operative action of Government in furthering those objects, for the advancement of which the Society was originally founded. The contemplated transfer of the Society's collections to Government as the nucleus of an imperial museum, and the measures now pending for a more general and systematic registration of meteorological observations, are further actual evidence of a similar enlightened disposition, and in your Excellency's acceptance of the office of its patron, the Society will receive an assurance that under your Excellency's rule, the advancement of science in its widest sense, the rescue from oblivion of the records of the past, the observation and orderly co-ordination of actual phenomena under the influence of human thought, and the wider diffusion of the embodied results of human experience for the instruction of the future, will not less than heretofore be deemed worthy objects of an enlightened and progressive Government."

HIS EXCELLENCY'S REPLY.

"TO THE PRESIDENT AND MEMBERS OF THE ASIATIC SOCIETY
OF BENGAL.

"GENTLEMEN,—“I accept with pleasure the office of patron of the Asiatic Society of Bengal; and I can assure you of my earnest desire to do all that I legitimately can, for the furtherance of the important objects which the Society has at heart.

“I have perused with much interest the statement embodied in the address just presented, regarding the results already accomplished by the Society, and the ends towards which it is still striving. I am persuaded that the Society's operations are well worthy of co-operation and encouragement on the part of the Government in this country, in that they foster those scientific studies which practically conduce to civilization, and to material progress; while on the other hand, they effect great moral good by guarding the valuable

associations of the past; and by keeping alive our sympathies with the Oriental mind and character. Thus it is, that the work of your Society conduces both to European and to Native interests in India, and tends to strengthen the bonds of union between the rulers and the people.

"I trust, gentlemen, that we may preserve the memories and traditions of the great and good men who have adorned this Society during the eighty years of its existence, and that the example of their learning and wisdom may animate and inspire us in our efforts for the future.

"I beg that you will receive the expression of my best wishes for the continued success and prosperity of the Asiatic Society of Bengal."

(Signed) "JOHN LAWRENCE."

Calcutta, 8th February, 1864.

Letters from Messrs. H. Stainforth, A. M. Monteath, Captain J. Davidson and Major A. D. Dickens, announcing their withdrawal from the Society were recorded.

The following gentlemen duly proposed at the last meeting were balloted for and elected ordinary members :

H. R. Spearman, Esq.; C. J. Wilkinson, Esq.; F. A. Pellew, Esq., c. s.; Baboo Jagadánund Mookerjee; Lieutenant E. A. Trevor, Dr. W. J. Palmer and Lieutenant G. M. Bowie.

The following gentlemen were named for ballot as ordinary members at the next meeting :—

J. L. Stewart, Esq., M. D., Assistant Surgeon, Lahore,—proposed by the President, and seconded by Mr. H. F. Blanford.

Professor H. Blochmann,—proposed by Captain Lees, and seconded by Mr. H. F. Blanford.

The Rev. W. G. Cowie, Domestic Chaplain to the Right Rev. the Lord Bishop of Calcutta,—proposed by the Bishop, and seconded by the Rev. M. D. C. Walters.

The Hon'ble Maharaja Mirza Vijaya-rám Gajapati Raz, Munniam Sultan Bahadur of Vizianagram,—proposed by Rajah Sutto Shurn Ghosal Bahadoor, and seconded by Moulvi Abdool Luteef Khan Bahadoor.

Communications were received—

1. From R. H. Barnes, Esq., abstract of the meteorological observations taken at Gangarowa near Kandy, in Ceylon, for July and August, 1863.

2. From Baboo Gopeenauth Sen, an abstract of the results of the hourly meteorological observations taken at the Surveyor General's Office, Calcutta, for December last.

3. From the Punjab Auxiliary Committee to the Asiatic Society, through Dr. A. Neil, the following papers—

I. On the geological features, &c., of the country in the neighbourhood of Bunnoo and the sanitarium of Shaikh Boodeen.

II. Extract from a report by Captain H. Mackenzie on the antiquities of Guzerat.

III. Inscription on the Dharian Baolee.

IV. Inscription on the Mugbura at Hailan.

V. Illustrated table of coins occurring in the bazars of the district.

4. From Lieutenant-Colonel R. C. Tytler, through Mr. Grote, observations on a few species of Geckos alive in his possession.

Baboo Rajendra Lal Mitra then read his paper on the Buddhist remains of Sultangunge.

The paper having been read, a vote of thanks was passed to the Baboo for his interesting remarks.

In consequence of the lateness of the hour, the paper on the antiquities of Guzerat by Captain Mackenzie was not read.

The meeting was then made special, pursuant to notice, in order to decide upon the proposition of the Council, relative to the transfer of the Society's museum to Government.

The Chairman reported to the meeting, that in accordance with a vote passed at the ordinary monthly meeting in January last, the correspondence with Government on the subject of the transfer of the museum had been circulated to non-resident members, and their votes taken on the following proposition:—

“That the Council be authorized to enter into definite and conclusive arrangements with the Government of India, relative to the proposed transfer of the Society's museum, in accordance with the terms of the correspondence.”

The result was—

For the proposition, 73.

Against, 1.

Majority in favor of transfer, 72.

The proposition was then put to the vote of the meeting by the Chairman, and the votes were found to be as follows:—

For the transfer 17.

Against, none.

The sum of the votes of resident and non-resident members were therefore as follows:—

	For the proposition.	Against it.
Resident members,	17	0
Non-resident members,	73	1
	<hr/>	<hr/>
Total,.....	90	1
	<hr/>	<hr/>

And the proposition was carried.

FOR APRIL, 1864.

The monthly general meeting of the Asiatic Society of Bengal was held on the 6th instant.

A. Grote, Esq., in the chair.

The proceedings of the last meeting were read and confirmed.

Presentations were announced—

1. From his Highness Prince Gholam Mohammad, a copy of "Blagdon's History of India," and a copy of his revision of a work entitled "The History of Hyder Shah and of his Son Tippoo Sultan," with a framed portrait of his father, Tippoo Sultan.

2. From the editor of the *Calcutta Christian Intelligencer*, the three first numbers of his magazine for 1864.

3. From Captain C. Mead, Royal Artillery, through Baboo Rajendra Lal Mitra, a stone slab from Buddha Gaya bearing a Sanscrit inscription.

4. From Major H. Raban, ear-rings worn by a Rengmah Naga chief, being made of the hair of three enemies of the Angami Naga tribe, killed in fight.

5. From Col. J. C. Brooke, specimens of minerals from the Aravalli Mountains.

6. From Dr. Anderson, two botanical and some zoological pamphlets.

7. From J. Avdall, Esq., a copy of Victor Langlois' "le Trésor des chartes d'Arménie ou Cartulaire de la Chancellerie Royale des Roupéniens."

The Secretary exhibited some photographs by A. C. Crommelin, Esq., of the fossil lately discovered by Major Gowan, in the Mahadeva sandstone of Central India. He had received information from Mr. Carnac that the fossil in question was now on its way to Calcutta, and it would be necessary to await its arrival before its nature could be confidently determined.

Colonel Guthrie exhibited a pair of elephant tusks of unusual size.

A letter from Dr. Archer intimating his desire to withdraw from the Society was recorded.

The following gentlemen, duly proposed at the last meeting, were balloted for and elected ordinary members :—

J. L. Stewart, Esq., M. D. ; H. Blochmann, Esq. ; the Rev. W. G. Cowie ; and the Hon'ble Maharaja Mirza Vijaya-rám Gajapati Raz, Munniam Sultan Bahadur.

The following gentlemen were named for ballot as ordinary members at the next meeting :—

Dr. Bird, Civil Surgeon, Howrah,—proposed by Mr. Blanford, seconded by Dr. Anderson.

N. S. Alexander, Esq., C. S.,—proposed by Mr. W. L. Heeley, seconded by Mr. Blanford.

Dr. J. B. Barry,—proposed by Mr. Blanford, seconded by Dr. Partridge.

G. W. Cline, Esq.,—proposed by Mr. H. F. Blanford, seconded by Mr. W. L. Heeley.

Baboo Ramá Nath Bose,—proposed by Baboo Rajendra Lal Mitra, seconded by Baboo Jadava Krishna Siñha.

The following letter from J. Mulheran, Esq., on the subject of the caves of Ajunta and Ellora, addressed to Colonel Thuillier, was read :—

"Having lately visited the Fort of Dowlatabad, and the caves of Ellora and Ajunta, and taken a number of photographs of the same, in compliance with the wish expressed in your letter of the 6th October, 1863, I beg prominently to notice that there is a large slab in one of the recesses of the Jumma Musjid of the Dowlatabad Fort, which is covered with Pali characters similar to those in cave

No. 26 at Ajunta. I beg to add that I have no doubt that this building, although now known as the Jumma Musjid, existed long prior to the times of Mahomed, and that it was originally used as an audience hall by the ancient kings of the country. It is upwards of 150 feet in length, and has three rows of remarkable stone pillars running along its entire length. Since its occupation by Mahomedans a dome of brick has been added to the centre.

"2. As Dowlatabad was formerly known as Deoghur, and is believed to have been fortified by Buddhists, I feel convinced that a translation of the characters to which I have referred, will throw light not only upon the date of the fort itself, but upon the dates of the neighbouring caves of Ellora and Ajunta. The inscription at present is covered with *chunam*, or rather with two or three coats of white-wash; but having removed a portion of these, I am able to state that the characters are in perfect preservation. A sketch accompanies [this letter] showing the position of the slab referred to, which is nearly 4 feet square, and has, I believe, hitherto escaped notice.

"3. Owing to the kind aid of Major Gill, who has charge of the Ajunta caves, I was able to take a dense negative of the interior of cave No. 26, and as he has already furnished the Madras government with *facsimiles* of the Pali inscription of the Ajunta excavations, I would respectfully suggest his being asked, through the Resident of Hyderabad, to furnish a copy of the inscription in the recess of the Dowlatabad Jumma Musjid.

"4. No reference having been made to the caves at Mahore in any work hitherto published, I beg to mention that Captain Pearson accompanied me over portions of those in one of the ravines under the town of Mahore, and that they are similar in character to the caves of Ellora and Ajunta. All, however, are at present more than half full of mud, little more than the heads and arms of the sculptured figures being visible. I beg further to notice that there are a number of remarkable stone temples known as Himarpanti, or Demon erections, scattered over the country between Ellora and the Godavery, which the people admit to be of Buddhist origin; the tradition relating to them having reference to one of the Buddhist kings of Ceylon of the name of Raon, who is annually slaughtered in effigy by Hindoos of all denominations.

"5. I have not yet been able to obtain access to papers in the possession of the Jains of Berar, which would, I feel convinced, throw light upon much that is interesting in the habits and customs of a people that formerly ruled the greatest portion of India. I have, however, lately been informed that Dr. Haug of Poona has succeeded in obtaining possession of a number of Jain books in the Pali character, and that he intends to use them in illustration of the Jain literature and history.

"6. If considered necessary, I will furnish photographs of some of the most remarkable of the Himarpanti temples, giving views of their interiors as well as of their elevation. The most ancient are sunk three or four feet below the level of the surrounding ground, and are so covered in as to be barely perceptible to those ignorant of their locality."

The Council submitted for the approval of the Society, the following report from the Philological Committee, which had been adopted by them :—

REPORT.

The Philological Committee recommend to the Council that the following offers to edit works in the *Bibliotheca Indica* be accepted :—

1. From Pundit Jayanáráyana Tarkapanchánana, Professor of Philosophy in the Sanscrit College, to edit the *Nyáya Bháshya* of Vátsyáyana.

This is a very rare work. Three MSS. are available for the text. It is the earliest commentary on the Nyáya aphorisms, and is of the utmost importance for ascertaining the doctrines of the ancient as opposed to the modern Naiyáyika school. It will occupy about two Fasciculi.

2. From Dr. Mason of Tounghoo, to print a Pali Grammar prepared by him from a Native Grammar found in a Burmese monastery. Mr. Grote and Dr. Sprenger formerly reported favourably upon the MSS. Dr. Mason proposes printing the Grammar at the "Tounghoo Karen Institute Press," and requests that he may have 100 copies.

3. From Pundit Rámnáráyana, to edit the Sutras of Asvaláyana with the Vritti. This is the authority for the sacrificial ceremonies of the Hotris or Priests connected with the Rig Veda. It will occupy about six Fasciculi.

4. From Captain Lees, to superintend the editing by a Moulavy of the poem of Ramyn and Wais. The Philological Committee refer for an account of this most rare and valuable ancient Persian poem (translated from the Pehlevi) to the letter from Dr. Sprenger in the Journal No. II. for 1863. Only one MS. is known to be extant, and it is of great importance that a poem possessing so many claims to our notice should be preserved by printing from the many accidents incidental to MSS. in such a climate as Bengal.

Communications were received—

1. From Lieut.-Colonel R. C. Tytler, "Observations on keeping salt-water fish alive for a considerable time."

2. From H. F. Blanford, Esq., A note on the late hail-storm in Calcutta.

3. From Colonel J. C. Brooke, through Captain W. N. Lees, A paper descriptive of "The Mines of Khetree in Rajpootana."

4. From Captain H. G. Raverty, "The Pushto or Afghan Language from an American Point of View."

5. From Dr. A. Wise, F. R. S., A paper entitled "Peculiarities and Uses of the Pillar Towers of the British Islands."

6. From J. E. T. Aitchison, Esq., M. D., F. R. C. S., F. L. S. E., "Remarks on the Vegetation of the Islands of the Indus River."

7. From Baboo Gopeenauth Sen, An Abstract of the Hourly Meteorological Observations taken at the Surveyor General's Office in January last.

8. From the Under-Secretary to the Government of India, Public Works Department, Copies of Major-General Cunningham's Diaries of Occupations as Archæological Surveyor for the months of November and December, 1863, and January, 1864.

The Hon'ble the Lieutenant-Governor then read to the meeting portions of letters received from the Hon'ble Ashley Eden, giving an account of the principal incidents of his journey to the capital of Bhotan. Colonel Thuillier also exhibited maps of the route compiled from information received from Captain H. Godwin Austen, Topographer to the Bhotan Expedition; and offered some remarks in explanation of the circumstances under which the data for these maps had been obtained.

The thanks of the meeting were voted to the Hon'ble the Lieut.-Governor and Colonel Thuillier for the above interesting communications.

Colonel Tytler's and Mr. Blanford's papers were then read to the meeting, and in the discussion which ensued on the latter paper, some observations of interest were made by Dr. Brandis and the Hon'ble Mr. Beadon, which were recorded for publication with the original paper.

FOR MAY, 1864.

Lieut.-Col. J. E. Gastrell, in the chair.

The proceedings of the last Meeting were read and confirmed.

Presentations were received—

1. From Col. H. L. Thuillier, a copy of the Instructions for taking Meteorological Observations with tables, By Sir H. James, R. E.

2. From Kongl. Norske Frederiks Universitets Secretariat, several works published by the University, and other Norwegian works.

3. From Professor C. A. Holmboe, 4 pamphlets.

4. From Syud Keramat Ali, Hooghly, a copy of his work entitled *Byan Makhza 'Alûm*.

5. From the Hon'ble L. S. Jackson, a copy of an Inscription on a brick-built mosque at Bagha, in Rajshahye.

6. From W. S. Atkinson, Esq., specimens of *Streptaulus Blanfordi* and *Clausilia Iôs* from Darjeeling.

7. From Lieutenant-Colonel R. C. Tytler, a collection of fishes, mammalia and minerals.

8. From the same, through A. Grote, Esq., specimens of Andamanese Geckos, in spirit.

9. From the Hon'ble Ashley Eden, a collection of bird skins and a Pteromys, collected during the Bhotan expedition.

Letters from R. H. Wilson, Esq., F. L. Beaufort, Esq.* and the Hon'ble E. P. Levinge, intimating their desire to withdraw from the Society were recorded.

The following gentlemen, duly proposed at the last meeting, were balloted for and elected ordinary members:

Dr. R. Bird, Civil Surgeon, Howrah: Dr. J. B. Barry; N. S. Alexander, Esq., c. s.; G. W. Cline, Esq. and Baboo Ramâ Nath Bose.

* Announced in error. See Proc. for June.

The following gentlemen were named for ballot as ordinary members at the next meeting :—

Brigadier-General H. G. D. Showers,—proposed by Mr. Grote seconded by Colonel Thuillier.

R. E. Goolden, Esq.,—proposed by Dr. Partridge, seconded by Mr. Blanford.

J. O.' B. Saunders, Esq.,—proposed by Captain W. N. Lees, seconded by Mr. Blanford.

Moulvi Moula Bukhsh Khan Bahadoor of Patna,—proposed by Moulvi Abdool Lutef Khan Bahadoor, seconded by Mr. Blanford.

Baboo Jadu Nath Mookerjee, of Rajshahye,—proposed by Mr. Heeley, seconded by Mr. H. F. Blanford.

As a corresponding member, E. Blyth, Esq., Associate Member of the Society,—proposed by Dr. Jerdon.

A discussion arose on this nomination, Mr. Blyth being already an Associate Member of the Society, and it appearing doubtful, whether any additional distinction would be conferred, by his election as a corresponding member; it was, therefore, proposed by Dr. Brandis, that as Mr. Blyth is now an Associate Member of the Society, the nomination be referred to the Council for a report; which proposition being put to the vote was adopted by the meeting.

The Council reported that they had elected Colonel H. L. Thuillier and H. Scott Smith, Esq., as members of the Council, in place of Messrs. Cowell, and H. Leonard, who had left for Europe.

Communications were received—

1. From Reverend M. A. Sherrings, L. L. B., and C. Horne, Esq. C. S., a paper entitled "Description of the Buddhist Ruins at Bakariya Kund, Benares," with illustrations of plans and photographs.

2. From the Under-Secretary to the Government of India, Public Works Department, a copy of a report on the proceedings of the Archaeological Surveyor to the Government of India, for 1862-63.

3. From Baboo Gopeenauth Sen, an abstract of the Hourly Meteorological Observations taken at the Surveyor General's office in February last.

The paper of Colonel Brooke on the mines of Khetree, in Rajpootana, and that of the Reverend M. A. Sherrings, L. L. B., and C. Horne, Esq. C. S., describing the Buddhist ruins at Bakariya Kund, Benares, were read.

JOURNAL OF THE ASIATIC SOCIETY.

No. III. 1864.

Remarks on the date of the Pehewa Inscription of Raja Bhoja.—*
By Major-General A. CUNNINGHAM.

The age of the Pehewa Inscription of Raja Bhoja has been a subject of difference between Babu Rajendra Lal and myself, for some years past. When he first published the inscription in 1853 (*J. A. S. Bengal*, p. 674) he read the date as 179 Samvat, to which I demurred at the time. He again referred to the subject in 1858, (*J. A. S. Bengal*, p. 76) and his remarks lead me to believe that at that time he still adhered to his original reading. But in an article just now published, he has finally come round to my view of the subject by candidly admitting that the forms of the alphabetical characters may be “a good test to some extent,” and that we are fully justified in placing the date of the Pehewa Inscription in the 9th, 10th, or 11th century, (see *J. A. S. Bengal*, 1863, pp. 100, 101).

With this happy conclusion I should have been contented to let the matter drop; but as, during the discussion, several erroneous statements have been put forth by the Babu, some of which affect me personally, I think it right, in justice to myself, to correct these errors at once, lest others should be misled by the Babu's authority to believe that they are actually my opinions.

When the Babu first published his translation of the Pehewa Inscription, I objected to his placing Col. Tod's first Bhoja in the year 179 *Samvat* according to his reading of the Pehewa inscription. When I made this objection I knew nothing more of this inscription than what Rajendra had himself published. But as I knew that two

* For Babu Rajendralala Mitra's reply to these Remarks vide the Proceedings of the Society for September last (*Ante*, vol. XXXII. p. 437.)—*Ens.*

Bhojas had flourished at much later periods, namely in A. D. 876 and A. D. 1030, I thought it quite possible that there might have been some omission in the figured date, and that the true reading might perhaps be 1079, instead of 179. Rajendra now states that the actual date is 279, and that the reading of 179 was a misprint in his paper in *one place* (see J. A. S. B. 1863, p. 98.) But on this point I must refer the Babu to his previous article, where he will find that the number 179 is given twice directly, and twice indirectly, or altogether in no less than *four* places. As in the two latter instances this number is obtained by subtraction, I think that the Babu must have altogether forgotten the remarks which accompanied his translation. At p. 674, J. A. S. Bengal, 1853, he gives the date of the inscription as "S. 179 = A. C. 122." Now if S. 179 be a misprint, even so must the equivalent date of A. C. 122 be a misprint. And similarly the Babu's remark that "the first Bhoja lived about three and a half centuries before the time assigned him by the learned historian of the Rajputs" must contain another mistake in the number *three*, which is written at full length. For the date of Col. Tod's first Bhoja is the end of the fifth century (or 483 A. C. as quoted by the Babu in this very paper) from which deducting 350 years we obtain A. D. 133, which is within *eleven* years of A. D. 122, (the equivalent of Samvat 179) but which differs no less than *eighty-nine* years from A. D. 222, the equivalent of Samvat 279. There can be little doubt therefore that when the Babu obtained the date of A. D. 122, and also when he wrote at full length the words "three and a half centuries" he must himself have read the date as 179. The number 279 occurs *once* only in this paper, and that is in the Devanâgari transcript.

A long time after I had made the above objection Mr. Grote kindly sent me a pencil tracing of the date made by Rajendra himself, together with the words *Samvat* and *Vaisâkh Sudi*. On seeing the few letters of these words I wrote to Mr. Grote, as printed in the Bengal As. Soc. Journal, that the inscription was beyond all doubt a middle age one, because the forms of the letters were those of the 11th and 12th centuries, to which I added that I read the date as S. 1190 or A. D. 1133.

Babu Rajendra now writes that Mr. E. Thomas entirely concurred in this reading, and that Professor Weber had also adopted it, but, adds the Babu "none of my critics thought it worth his while to look

to the genealogy of the prince named." He then goes on to say that "it may appear strange that Col. Cunningham and Professor Weber should, from a mere identity of names, infer the identity of persons, and yet both of them found the name of a Bhoja in the monument under notice, and *per saltum* came to the conclusion that it was that of Dhâra, overlooking," &c. As the most complete refutation of this strange statement, I need simply refer the reader to the difference of one whole century between the date of A. D. 1133, as suggested by me, and that of A. D. 1030, the well-ascertained period of Raja Bhoja of Dhâra.

In my proposed reading of the date I assumed that a single cypher had been unintentionally omitted. But this assumption the Babu declares to be "a guess at random which can claim no confidence," although I had most pointedly drawn his attention to a blundered date in one of my Kajraha inscriptions (J. A. S. B. 1860, p. 396), a facsimile of which inscription was with the Babu when he penned the above paragraph about a random guess. I will now further refer him to the Buddha Gaya inscription published by himself in J. A. S. B. Vol. XXVII. p. 74, for an actual omission either of the final letter of the word Samvat, or of the initial cypher of the date. I refer also to this particular inscription on account of the date itself, which has been misread by Rajendra as 781, instead of 981. I grant that, in 1858, before he had seen my Gwalior inscription of S. 933, in which the figured date is accompanied by a written one, it was only natural that he should have read the Buddha Gaya date as 781. But the case is altogether altered when in the present year he still quotes this same inscription as being dated in 781, and makes use of this erroneous date to prove that the Kutila character had a range of at least four centuries, or from Samvat 781 = A. D. 724 to 1124. That this might be true no one, to my knowledge, has ever denied, and it certainly was not likely to have been denied by me when I have had in my possession for many years the following dated inscriptions in slight varieties of the Kutila character.

Inscription from	Bajjnâth,	dated	Sâke 726 = 804 A. D.
Ditto	„	Gwalior, „	Samvat 933 = 876 A. D.
Ditto	„	Kajraha, „	„ 1011 = 954 A. D.
Ditto	„	„ „	„ 1058 = 1001 A. D.
Ditto	„	Gwalior, „	„ 1161 = 1104 A. D.

As in these inscriptions we have a range of exactly three centuries, we may safely extend the range of the use of the Kutila character to at least four centuries, or say from A. D. 750 to 1150. There are of course some differences between the forms of the earlier and later letters, but the general appearance of the writing is essentially the same. But when an inscription in the Kutila character was seriously referred to the year 179 of the Vikramaditya Samvat, or to A. D. 122, I certainly did object, and I do so still.

With regard to the Kutila character I have to point out another misstatement regarding myself which has been made by Babu Rajendra Lal. In the article now under notice on Raja Bhoja of Dhâra (Bengal Journal, 1863, p. 101) the Babu says "the so-called *Kutila*, or the 'crooked' character, which according to Col. Cunningham owes its name to a mislection of the word *Kumuda*, or the 'lotus-like.' " On this subject I beg to refer the Babu to the Society's Journal for 1860, p. 394, where he will find that I have made no mention of the word Kutila at all; I simply corrected the word *Kakuda*, or "bad," which was most absurdly applied to the alphabetical character of one of the *Kajrâha* inscriptions, to *Kumuda*, or "beautiful." It is true that I once thought it possible that the word *Kuṭila* of the Bareilly inscription might also be, what the Babu calls a "mislection;" but I confined my published opinion to the word *Kakuda*, and kept my thoughts regarding the word *Kuṭila* to myself. Since then I have examined the *Kuṭila* inscription itself, and I find that the word is correctly rendered. *Kuṭila* means "crooked, or bent," and I would refer the epithet to the sloping or bent stroke which is attached to the foot of each letter. Apparently the Babu did not think it "worth his while (I quote his own words, vide p. 98 of Journal for 1863) to look to" the actual statement which I had published in 1860, and, trusting to his memory, has unintentionally made this statement regarding me.

Rajendra Lal has now given a facsimile of the Pehewa inscription, the date of which he says is "unmistakeably Samvat 279." (See p. 97.) But here I must again differ with him, for the middle figure of his facsimile is a 1, and not a 7. The day of the month also has been misread, as the figure of the facsimile is a 1, and not a 7. The first cypher of the date, as now given, looks certainly more like a 2 than any other figure, and the last cypher, according to my reading, is a 6, thus making the whole date 216. This might possibly refer to the

Sri Harsha era of 607 A. D., which would bring the date of the inscription down to A. D. 823. But if the middle figure is actually a 7 (as read by Rajendra, although his facsimile gives a 1) then the date would be 276, or A. D. 883 if referred to the Sri Harsha era, a period which would enable us to identify the Bhoja of the Pehewa inscription with his namesakes of Gwalior in A. D. 876, and of the Raja Tarangini in A. D. 883 to 901. I will endeavour to examine the original inscription during the ensuing cold weather, as I have a suspicion that the first figure of the date is not a 2, but either a 1 or a 9. In the pencil tracing sent to me by Mr. Grote the figure is a 1, and so it was read by Rajendra himself, as I have conclusively shown in the opening paragraphs of this paper.

Babu Rajendra has drawn attention to another Raja Bhoja, to whom allusion has been made by Professor Hall in his "Vestiges of the royal lines of Kanauj," with the dates of 960 and 964. To this monument the Babu states that I probably refer (see p. 96 of his article) in my letter published in the Journal for 1860, p. 395. But here again (to use the Babu's own words) he did not think it "worth his while to look to" my actual statement. Had he done so he would have found in J. A. S. B. 1860, p. 395, that I referred to the Gwalior Bhoja Deva inscription with its date of Samvat 933, "both in words and figures." In the same letter I added that "the form of the figure 9 in this date is the same as that which Rajendralal has read as 7," that is, in the Buddha Gaya inscription already quoted. Notwithstanding this direct notice of his misreading of the figure 7, the Babu, in his very last article on Raja Bhoja, has again brought forward this erroneous date of Samvat 721 to prove that the Kutila character was in use as early as that time. I may add that the Babu is equally wrong in his statement that the inscription referred to by Professor Hall, was found "at Gwalior." It is believed to have been found somewhere in the Gwalior territory, but the actual site is not known. It is certain, however, that it was not found "at Gwalior."

In the remarks which accompany his translation of the Bhoja Deva inscription of Gwalior, of which the date, *Samvat* 933, is given both in *words* and in *figures*, Babu Rajendra (J. A. S. Bengal 1862, p. 399) states that "the date is open to question." "The first figure," he adds, "is peculiarly formed, and may be taken for a 7, which would carry the prince to A. C. 676 = S. 733, or within eleven years of the

second Bhoja of Colonel Tod, with whom he may be taken to be identical." Here then we have the Babu deliberately committing the very error, which he has erroneously attributed to me. It is Rajendra himself who has "hastily jumped to a conclusion regarding the age of a dated inscription from the mere circumstance of the word Bhoja occurring in it."

Hitherto I have spoken only of Rajendra's errors of commission, of which I have to complain, as most of them affect myself personally. I will conclude with noticing his errors of omission, which are equally unfair towards me, and one of which has been the cause of error in others.

In his last article on the Bhojas (J. A. S. Bengal, 1863, p. 97) after mentioning the names of Bhoja Raja of Dhâra, and the Bhoja of the Raja Tarangini, Rajendra says, "The second of these princes I *assume* to have been identical with the sovereign named in an inscription on a Vaishnavite temple at Gwalior. He is described as a lord paramount, who flourished in A. C. 876." In this paragraph the Babu *assumes* the identity without making any reference to my letter, published in this Journal for 1860, p. 395, in which this identification was first made known.

A similar omission of my name occurs in the Babu's latest account of the Rohtas inscription, of which a translation was published in Vol. VIII. of this Journal, p. 695. In my letter, printed in this Journal for 1860, p. 395, I first pointed out that this inscription gave the genealogy of the Tomara Rajas of Gwalior, and that the name of the fourth prince, Dungara, had been misread as Hungara. In his Vestiges of the kings of Gwalior, published only last year, the Babu adopts this identification of the genealogy without acknowledgment and adheres to the name of Hungara in the Rohtas inscription, without mentioning my opinion that it is erroneous.

The last instance of the Babu's omissions, which I shall notice, is a more serious one, namely his adoption of my reading and identification of the *Huvishka* of the Wardak and Mathura inscriptions with the *Hushka* of the Raja Tarangini, without any mention of my name (see his translation of the Wardak inscription in this Journal for 1861, p. 339). My reading of the name of Huvishka in the Wardak inscription, and my identification of this prince with the Huvishka of the Mathura inscriptions, and also with the *Hushka* of

the Raja Tarangini, will be found in this Journal for 1860, pp. 400, 401. This silent adoption of my identification has enabled Mr. Thomas to ascribe it to Rajendra himself (see Journ. Royal Asiat. Soc. Vol. XX. p. 108 ; note 2.)*—and Mr. Thomas's authority, added to the Babu's own silence, has induced Professor Dowson to do the same. In the same Vol. of the Royal Asiat. Soc. Journal, Mr. Dowson writes as follows regarding Rajendra's translation of the Wardak inscription,—“ Before proceeding to criticise I will perform the more grateful task of applauding the success he has achieved, *especially* in the *reading of the name of the king* and in *identifying* him with the Hushka of the Raja Tarangini. This alone would have been a valuable gain.” Here then we see that the two points in the Babu's version of the Wardak inscription, to which Professor Dowson has awarded special praise, are precisely those two which the Babu has adopted from my published letter without any acknowledgment whatever.

Extract from a letter from Major-General CUNNINGHAM.

Dated, Nynee Tál, 24th May, 1864.

“ I have succeeded in clearing up the whole mystery of the date of Raja Bhoja in the Pehoa inscription, which is *written at full length in words*, as well as in figures. The date is 276—Rajendra has misread the name of Bhoja's father, which is *Rámabhadra Deva*, and not *Rámachandra Deva*, as may be seen most distinctly even in his own facsimile. This correction is most important, as it enables us to identify both father and son with two of the Rajas of Kanoj, whose names are given in the Benares copper-plate. To this identification Rajendra will object that the genealogy of the Pehoa inscription prior to Rámabhadra differs entirely from that of the Benares copper-plate ; and so it does differ beyond all doubt ; but there is no such genealogy in the Pehoa inscription of Raja Bhoja ! The explanation of this

* In the same volume, p. 99, in an article read on the 5th July, 1862, Mr. Thomas describes a square copper coin of *Epauder* whom he calls a “ new king.” But the name of this king had already been made known by me in this Journal for 1860, p. 396, from a similar copper coin in my own possession. Since then I have obtained a hemidrachma of *Epauder*, in bad order, and another copper coin in very bad preservation.

seeming mystery is simple enough. There are *two* distinct inscriptions at Pehoa, which have been taken by Rajendra Lal as forming only one record. The first inscription of twenty-one lines which contains the names of Mahendra Pâla, Vajrata, Gogga, &c., is given by Rajendra quite complete; but of the second inscription he has given only eight lines out of sixteen and a quarter lines. It is this second inscription which contains the names of Raja Râmabhadra Deva, and Raja Bhoja Deva, together with the date, which is written at full length in words, as well as in figures—thus :

samvatsare satadwaye shadsaptatyadike (?)

Vaisâkhamâsa sukla paksha saptasyâm.

Samvat 276 Vaisâkha sudi 7.

all of which may be read in Rajendra's own facsimile.

The date of the inscription being thus conclusively settled, it now remains to ascertain the era to which the date refers. This I believe to be the era of *Sri Harsha* of Kanoj, beginning in A. D. 607, which would make the date of the inscription A. D. 882. Now at this very time we know that a Raja Bhoja Deva was paramount sovereign of Gwalior, as his inscription, carved on the rock itself, is dated in Samvat 933, or A. D. 876. From the Raja Tarangini also we learn that a Raja Bhoja contended with Sankara Varma of Kashmir, who reigned between the years 883—901 A. D. I am quite satisfied that all these records refer to the same Prince, Bhoja Deva, who was Raja of Kanoj during the last quarter of the 9th century, or from about A. D. 875 to 900.

To prove this last statement it will be sufficient to show that Bhoja Deva, son of Râmabhadra Deva, was Raja of Kanoj about the date specified. Now the genealogy of this family, consisting of eight names, is given in the Benares copper-plate (Journ. As. Soc. Bengal, XVII. 71) in which Râmabhadra Deva and Bhoja Deva are the 4th and 5th names. The date of the inscription which is recorded in the reign of Bhoja's great grandson, is 65, which must refer to some recent era, and is not therefore of any assistance in fixing the actual date of this copper-plate. But the name of Bhoja's great grandfather, *Vatsa Raja*, is found in another copper-plate which is dated in 730 of the *Saka Salivahâna* or A. D. 808. In this record it is stated that *Paura Raja*, the father of the inscriber, had conquered *Vatsa*

Raja "who had become intoxicated with the wealth of the king of Gaur," (see Journ. Royal As. Soc. V. 350). According to this statement *Paura Raja* must have been reigning just one generation, or twenty-five years, prior to A. D. 808, or in A. D. 783. His antagonist Vatsa Raja may therefore be dated about A. D. 800, and Vatsa's great grandson Bhoja Deva about seventy-five years later, or in A. D. 875.

The result of all these concurring dates is to give us a very good and almost continuous outline of the history of Kanoj from the end of the sixth century down to the Muhammadan conquest, or for upwards of six centuries. The different dynasties may, according to my view, be dated as follows.

I.—BAIS RAJPUTS.

A. D. 575. Prabhākara Vardhana.

600. Rājya Vardhana.

607. *Harsha Vardhana*, founder of the era.

650. (Harsha's death).

700. Rammal, invaded Sind (Journ. As. Soc. Beng. X. 188).

715. Harchand, contemporary of Muhammad bin Kâsim (Abul Fuzl).

730. Yaso Varmma, conty. of Lalitaditya of Kashmir (Raj. Tar.)

Benares copper-plate.

775. Devasakti Deva.

800. Vatsa Raja Deva.

825. Nāgabhatta Deva.

850. Rāmabhadra Deva, } of Pehoa inscription.

875. Bhoja Deva,

900. Mahendra Pāla Deva.

920. Bhoja Deva II.

930. Vināyaka Pāla Deva.

TOMARAS.

979. Sallakshana.

1005. Jaya Pāla.

1021. Kumāra Pāla.

1051. Ananga Pāla, refounded Dilli.

RATHORS.

- 1050. Chandra Deva.
- 1080. Madana Pāla.
- 1115. Govinda Chandra.
- 1165. Vijaya Chandra.
- 1175. Jaya Chandra.
- 1193. *Muhammadan conquest.*

Note on the Fossils in the Society's Collection reputed to be from Spiti.—By T. OLDHAM, Esq., F. R. S., &c., &c.

In the Journal of the Asiatic Society of Bengal for the present year (1863), page 124, a paper is published descriptive of some of the fossils collected by Dr. Gerard in the Spiti district in the North-Western Himalaya, which fossils had been in the Society's Museum for many years, having been presented by Dr. Gerard in 1831.

The paper referred to, is said to be a 'revised copy' of one read before the Society in November, 1861. The original paper, of which a brief abstract was given in the Journal of the Society, 1861, page 418, had been ordered for publication by the Council of the Society, but some delay occurred in the preparation of the plates to illustrate it, in consequence of the author having temporarily left India at the time, and it was not issued. Meanwhile changes in the author's views having taken place, he first desired that the paper should be issued as originally drawn up, with a postscript, but subsequently on his return to India he states that he 'withdrew' the paper and 'modified' it into its present form in which the conclusions arrived at are in several important respects just the opposite of those originally announced.

This was indeed, as the author says, "A very considerable alteration;" but the paper in its present form never having been submitted either to the Council, or to the Society, having been in fact withdrawn, and so altered without the sanction of the Council having been obtained, there has been I regret to say, no opportunity, previously to its publication, of communicating with the author.

It is not my intention to discuss in any way the correctness or incorrectness of the identification of species in the collection. This

important question can only be taken up with advantage, when the whole series of the fossils from the same localities, now in other collections, shall have been examined. My present remarks are confined solely to the brief and general notice which Mr. Blanford has prefixed to his paper, and to the results there announced.

The facts appear to be these. In 1828 Dr. Gerard collected in the valley of the Spiti and in adjoining localities, a large number of fossils, (Gleanings in Science, Vol. I. page 109.) Of these a selection was forwarded to the Asiatic Society in 1831, (Gleanings in Science, Vol. III. p. 92.) These fossils excited great attention both from the interest attaching to the fact of their having been found in the very heart of the Himalaya, and also from the marked similarity of some of the species to known English forms. The collection was almost immediately examined by the Rev. Mr. Everest, and, at his request, a portion of it was sent to England to Mr. Sowerby. On the 8th of June, 1831, Capt. Herbert read a paper on these organic remains, which was published with a plate, in September of the same year (Gleanings in Science, Vol. III. p. 265.) This plate was a small etching from the more finished drawings of the same fossils prepared to illustrate the paper by Mr. Everest published in the 18th Volume of the Asiatic Researches, p. 107. Both these plates and reduced etching were prepared by Mr. James Prinsep himself. Again in 1832, Captain Gerard on the part of his brother forwarded to the Society 164 packets of fossils from the Himalaya, (Journ. As. Soc. Bengal, Vol. I. p. 363,) and in October he forwarded the first part of his brother's paper on Spiti, which also appeared in the 18th Volume of Asiatic Researches. Meanwhile Mr. Sowerby's reply to the reference of these fossils to him was received, dated October 14th, 1831, confirming Mr. Everest's conclusions, (Journ. As. Soc. Bengal, Vol. I. p. 248.)

From all this, it is clear that no time had been lost in taking up the examination of the fossils sent by Dr. Gerard; that these fossils came at once into the keeping of Mr. James Prinsep, were examined by Mr. Everest, and by Captain Herbert; were carefully drawn; that a portion of the collection and the figures were then submitted to Mr. Sowerby, and were *at once by him recognized as similar to others from the same localities which he had seen with Mr. Stokes and Dr. Buckland*. I conceive that the names alone of the gentlemen I have mentioned are abundant guarantee that no sufficient care was wanting

on their part to prevent any admixture of fossils from any other collection with those sent by Dr. Gerard. It seems beyond a question that Mr. Prinsep, Capt. Herbert, Messrs. Everest and Sowerby were all quite satisfied that the fossils figured on the plates I have referred to, had actually come from Dr. Gerard, and whatever confusion or neglect may have resulted in after years, the Society's collections at that time were certainly not in the disgraceful state of which Mr. Blanford so justly complains. It is then, I think, certain that these fossils from Dr. Gerard had not been accidentally mixed with the English fossils *after* they had come to Calcutta, and I think every one who reads Dr. Gerard's papers will also admit that he did not carry with him a collection of English Liassic fossils with which the Spiti collection could be 'accidentally' mixed, *before* its despatch to Calcutta. It must be borne in mind also that the plates of these fossils were published within a comparatively short time of discovery of them, when the error of having any admixture of English fossils could have been discovered.

Of seven species of ammonites so figured by Mr. Prinsep, and described by Mr. Everest and Mr. Sowerby as part of Dr. Gerard's collection, the author of the paper I refer to entirely rejects as 'spurious,' and as being English specimens, no less than five. Others, although there is not nearly so much evidence of their being from Spiti, are as unhesitatingly admitted as genuine.

M. Jacquemont visited the neighbourhood of Spiti in 1830, and brought away a noble collection of fossils which have unfortunately since remained undescribed in the Museum, Paris (with the exception of one or two species noticed by L. Von Buch.) Subsequently in 1860, I despatched Messrs. Theobald and Mallet, both of the Geological Survey of India, to Spiti, during the time when work in the plains of India was impracticable, with instructions to bring away as full a collection of fossils as the time they could devote to it would permit, and to make such notes and observations as would elucidate the Geological structure of the district. A brief account of the trip was given to the Society by Mr. Theobald and published in 1862, (*Journ. As. Soc. Bengal*, 1862, p. 480.) The collection made by these gentlemen was a good one considering the brief time at their disposal, but could not at all be accepted as fully illustrating the Geology of the valley. Mr. Theobald subsequently, in the spring of 1862, when

putting out and examining these fossils collected by himself, and Mr. Mallet, visited the Society's Museum to compare those species already named and described by Mr. Blanford. Among these he noticed several species of which *no* specimens had occurred to himself or to Mr. Mallet, and on examining these specimens more closely he noticed also a difference in the mineral character of the rock in which these species occurred. He at once, too hastily as I think, and without examining into the history of these fossils, but knowing well the neglect with which the Society's collections had been treated, came to the conclusion that these were not fossils from Spiti at all, but were English Liassic fossils, which had got mixed up with the true Spiti fossils. This idea he communicated at once to Mr. Blanford who at first rejected the notion, but subsequently, as stated by himself, adopted it fully.

Believing that there are no sufficient grounds for this conclusion, I cannot avoid noticing it. The question as regards Dr. Gerard's fossils alone would be of minor importance, but this matter involves a principle subversive of all sound progress in our knowledge of the Geological distribution of organic remains.

The grounds on which Mr. Blanford has rejected all those fossils which he had identified with English Liassic species are stated to be these.

1. Mr. Theobald's belief to that effect, which belief I know to have been based on a consideration of a slight difference in the mineral character of the rock.

- 2nd. An examination of undoubted Whitby fossils.

- 3rd. An examination of Col. Strachey's collection from the Niti pass, north of Kumaon.

- 4th. An examination of General Hardwicke's collection from Nepal, and—

- 5th. An examination of Jacquemont's collection from near Spiti.

Putting out of the question for the moment Jacquemont's collections which were from nearly the same ground as Gerard's, I cannot see in what way the nature of the fossils found at Whitby in Yorkshire, of those found in Nepal some five hundred miles off, or at Niti more than one hundred miles off, can possibly determine the *fact of the occurrence or non-occurrence of certain forms at Spiti*. There is no question here as to the identity or even the similarity of the species, in determining which a comparison of the others would un-

questionably be useful; the question is simply do they occur, or do they not. I reject as useless also, in any bearing on this fact, the consideration of the nature of the rock in which they are found. Differences or resemblances in mineral character are utterly worthless as guides to such facts.

The non-occurrence of the species referred to in Jacquemont's collection, and in that made by Messrs. Theobald and Mallet remains. Now did two persons visiting even a single quarry to collect fossils after an interval of time ever come away with the same species? But here was not a quarry but a district stretching over some fifty miles of difficult country. The fact that these species did not occur to Jacquemont, or afterwards to Theobald and Mallet, no more disproves the fact they had previously occurred to Gerard than any other case of this kind. It might just as conclusively be argued that some of the beautiful fossils from the cretaceous rocks of S. India which were originally collected by Messrs. Kaye and Cunliffe and described by E. Forbes, were not from that district at all, but from some other and far distant locality, and had been 'accidentally mixed' up with their genuine collections, because the same species were not met with by Mr. Blanford himself in his subsequent and much more detailed examination of the same area.

But there is still another and to my mind a conclusive proof that the specimens rejected by Mr. Blanford did really belong to Gerard's collections, a proof which I should have been glad to communicate to Mr. Blanford had there been an opportunity. A reference to Mr. Sowerby's letter which I noticed above, will show that similar fossils are said to have been in the possession of Dr. Buckland. To that Geologist, then one of the most zealous palæontologists in England, a fine series of these Spiti fossils were sent by Dr. Gerard himself. This collection still exists among the other treasures of the Oxford Museum, and I had the pleasure of going over it carefully with Prof. Phillips last year, having visited Oxford for the purpose. It cannot be supposed that in this series also Whitby or English fossils had got mixed either 'accidentally' or otherwise. The care with which the collections at Oxford have been kept is sufficient to render this idea untenable for a moment. But in this (Gerard's) collection at Oxford are several specimens of several of the species* noticed by Mr. Blan-

* I may mention notably *Ammonites bifrons*, *Am. communis*, both of which

ford, and by him rejected as spurious Spiti fossils. I think this fact quite conclusive, and that all the specimens so hastily rejected as Spiti fossils by Mr. Blanford must be restored to their proper place in this interesting and valuable collection.

I said before that I had only to deal with the facts, what the conclusions derived from those facts may be is not now under discussion, and whether there be in the Spiti district Liassic beds or whether these Liassic species* occur in the same beds with others, supposed to belong to different periods are questions which must await future solution. I regret that the circumstances I have mentioned above, (viz., that this paper by Mr. Blanford in its present state never had come before the Society or Council) prevented my having an opportunity of making the author acquainted with the fact, that in another portion of Dr. Gerard's Spiti collections, several specimens existed of the very species which, on such insufficient grounds, he has rejected here.

I cannot, however, conclude without again directing serious attention to the very great mischief arising from dealing with questions of fact in this way. If the fact of the occurrence of certain forms in certain places is to be thus questioned, and fancy or some supposed mineral resemblance is to be accepted as negating the deliberate statements of those who had collected the fossils, supported by the evidence of careful investigators who had examined these fossils almost immediately after their discovery, (and not thirty years after), there can be no progress. It would be infinitely better, and infinitely safer, to leave such specimens, as they are said to have been found, without labels, or even to throw them out, than to falsify all the landmarks of science by exhibiting them with localities attached which are only imaginative. The specimens referred to are now (September 18th, 1863,) put out in the Society's Museum (by whose authority I know not) mounted and carefully named and marked, *Upper Lias, Whitby, England*, without any note of doubt, and without any reference whatever to the fact that they had ever been even supposed to come from Spiti. Collections thus treated are worse than useless, they are mischievous.

occur in the Society's collection; also *Am. crassus*, Phillips, a true Liassic species but of which specimens do not occur in the Society's cabinet.

* *Ceratites Himalayanus*, Blanford, is exhibited in the Society's collection as from the *Upper Lias*, Spiti valley.

Notes on the variation of some Indian and Burmese Helicidæ, with an attempt at their re-arrangement, together with descriptions of new Burmese Gasteropoda.—By W. THEOBALD, Esq., Junior.

Since my paper on the distribution of our Indian terrestrial Mollusca was read at the February meeting of the Asiatic Society, several new species have accumulated on my hands, which I propose to describe in the present paper, and at the same time, to offer some remarks on certain nearly allied forms, which a careful examination compels me to consider, as merely well marked and persistent types of one species, connected as they are by intermediate forms, whose number is constantly on the increase.

The question of where variation ends and specific separation is called for, is of course not easily settled by any precise rule, and has always been regarded as depending more or less on the peculiar views or idiosyncrasy of the individual naturalist, and has resulted in the manufacture of an erroneous number of new species, ostensibly of equal value, but many of them in reality entitled to no higher rank than varieties. I myself have offended in this way; but whilst deprecating for the future the creation of species, in the unqualified manner hitherto too common, I prefer a specific (or sub-specific) name for all well marked local forms, to the method advocated by some, of indicating such shells by a letter of the alphabet, as var A or var B of the type, or first described individual, however little it may merit such distinction save on the ground of mere priority.

My friend Mr. H. F. Blanford, has already done good service by decimating the ranks of shadowy species ranged under the genus *Tanalia*, in his paper in Volume XXIII. of the Linnæan Transactions, wherein he reduces the *twenty-six* recorded species of the genus to *two*, *Tanalia violacea*, Layard, and *T. aculeata*, Gmel. which last shell exults in no less than twenty-four synonyms, (twelve contributed by Reeve, nine by Dohrn and three by Layard).

This genus (*Tanalia*) well illustrates in my opinion the advantage of retaining a distinctive name for well marked types of what, critically viewed, is but one species, for a considerable amount of obscurity, quite unredeemed by superior brevity, results from the use of simple letters, rather than well chosen and distinctive epithets for well marked local types, many of which have hitherto, though erro-

neously, stood as distinct species. Whilst therefore concurring in the results of Mr. Blanford's examination of the genus *Tanalia*, I would prefer retaining the known designations of such well marked types as *T. Tennentii*, *T. neritoides*, and the like, to recording them all as *T. aculeata*, Geml. var. A or var. B.

The alphabetical or numerical method of discriminating varieties, would certainly possess considerable advantages if all the varieties of a species could be arranged in an unbroken right line, instead of one very much given to ramification, but even in that case the type species by priority would often have to be set aside, as falling naturally into some other position, than at the head of the series; I therefore shall retain, in this paper, many names which I now regard as of merely sub-specific value instead of discarding them *in toto* as soon as their identity, if critically considered, with some previous species is established; and shall on the same principle, bestow distinctive names on those which of the shells herein described I regard as merely local races.

It might at first be imagined that strong support was derivable, from the enormous variation of form of some widely spread species, for the Darwinian view of the gradual extension by migration of all species in space, and the simultaneous change undergone by them, to meet changed conditions of existence, resulting in local types, and ultimately by the decay of intermediate forms, in so called distinct species; but this idea is speedily negatived by the consideration, that though some species exhibit an amount of variation, which might be plausibly accounted for by the Darwinian theory, yet others not less widely spread, either as to time or place, exhibit little or no such tendency, which seems rather a peculiarity (of temperament so to say,) marking certain species, than the result of a general law regulating the development of all. A notable example of this is afforded by the little *Helix labyrinthica*, Say, which has remained unchanged during the cons which have elapsed since the Eocene period, occurring fossil in the Headon beds on the Isle of Wight, and living at the present day in Alabama. *Bulinus punctatus* and *Bulinus pullus*, Gray, may also be quoted, the first species inhabiting, unchanged to any perceptible extent, the plains of India and the shores of Mozambique, whilst the last ranges widely through India and some of the neighbouring countries, (Burma and even the shores of the Red Sea,) and occurs fossil in the alluvial deposits in the Nerbudda valley, where individuals, undis-

tinguishable from recent specimens, accompany the extinct fauna which embraced the Hexaprotodon and its congeners: (vide Memoirs of the Geological Survey, Vol. II.)

Of species subject to considerable local variation, *Helix Huttoni* may be selected, if, as I am inclined to think, it may be regarded as specifically identical with *H. rotatoria* V. dem Busch; and the highly variable *H. similis*, Fer., with respect to which it may here be remarked, that its most variable and dissimilar forms, are not those most widely dissociated in space, as might be surmised from the Darwinian explanation for such variations, as its local Indian forms more widely differ from the type and from one another, than individuals from the far off Mauritius and the Brazils.

HELIX SIMILIS, Fér.

At the head of the varieties, as I regard them, of this species, I place *H. sculpturita*, B. This form inhabits the Irawadi valley above the British frontier, and is a stout well marked shell passing by degrees into *H. Zoroaster*, Th., though in this case as in others, the intermediate forms are usually scarcer individually and more variable than the types they tend to unite. Allied to some extent, but not very closely, is *H. Peguensis*, B., from I believe, the Eastern parts of Pegu. *H. Zoroaster* which is intimately related to *H. sculpturita* on the one hand and *H. similis* on the other, occurs in tolerable number about Thait mio and the neighbourhood, and passes gradually into the type form of *H. similis*. *H. pilidion*, B., is a thin-keeled shell related to *H. similis*, from probably the same locality as *H. Peguensis*, and last comes the rotund, globular shell common about Thait mio, Prome, &c., described by Benson as *H. bolus*. Several intermediate gradations occur between *H. Zoroaster*, *H. bolus* and the type *H. similis*, but not sufficiently marked to require special enumeration; the whole may thus naturally be arranged as below, those marked thus * being aberrant, the forms required to connect them more closely, having probably to be discovered.

<i>H. sculpturita</i> , B.	Ava.
<i>H. Peguensis</i> , B.*	
<i>H. Zoroaster</i> , Th.	Thait mio, Prome, &c.
<i>H. pilidion</i> , B.*	
<i>H. similis</i> , Fér.	Thait mio, Bengal, Mauritius.
<i>H. bolus</i> , B.	Thait mio, Prome, &c.
<i>H. cestus</i> , B.*	Khasi hills.

Of *H. cestus* I have but three individuals, but they seem to form merely a well marked local type of the species under consideration. They occur with or without the band; the two varieties differing slightly in other respects as well; somewhat as *H. Peguensis* does from *H. sculpturita*, the bandless variety of which it much resembles.

H. ROTATORIA, V. dem Busch.

This species, though affording strongly marked varieties, is not a variable one individually. We have in Burma the larger and more common form of seventeen millimeters, which varies very slightly, and a smaller form (*H. Arakanensis*, Th.) of only thirteen millimeters, with a higher spire, which also varies very little; and evidently connects the species with *H. Huttoni*, the largest specimen of which from India in my possession is also thirteen mills. but with a flatter spire than the small var. of *H. rotatoria*. There is also the very variable race of *H. Akowktongensis*, Th., with its usually flattened spire, holding a place between the large and small forms of *H. rotatoria*.

H. tapeina and *H. Phayrei*, Th. also claim a place near the type of the species, the first nearly equalling a large *H. rotatoria* in size, whilst closely resembling a small one in form, and the second differing from the type *rotatoria*, in its narrower umbilicus, and more strongly marked sculpture. The little Indian *H. Huttoni* follows, chiefly differing in its small size, which may be averaged at eleven mills.

Most aberrant of all comes *H. Oldhami*, B. with its depressed spire, but it hardly differs more widely (save in one extra whorl), from a large *rotatoria* in form, than specimens of *H. Akowktongensis*, Th. do from one another. Intermediate forms are, however, requisite to connect *H. Oldhami*, B. as closely as the rest are.

H. rotatoria, V. d. Busch. Irawadi valley, below the frontier.

H. tapeina, B. Khasi Hills.

H. Phayrei, Th. Irawadi valley, above the frontier.

H. Arakanensis, Th. Arakan hills and Irawadi valley.

H. Akowktongensis, Th. Irawadi valley.

H. Huttoni, B. Himalayas, Southern India.

H. Oldhami, B.* Irawadi valley, above the frontier.

HELIX FALLACIOSA, Fer., is another variable shell, presenting three distinct types, as *H. asperella*, Pf. and its allied forms *H. Nagporensis*, Pfr. and *H. propinqua*, Pfr. *H. fallaciosa*, Fér., with its varieties and ally *H. Helferi*, B. and *H. ruginosa*, Fér. with its ally *H. crassicosata*, B.

The whole are so closely united as to be separable only one from another by the most arbitrary division. They may naturally be ranged thus:—

CAMENA Albers.	{	<i>H. Nagporensis</i> , Pfr.	Central India.
		<i>H. uncinata</i> , B. (<i>H. propinqua</i> , Pfr.	Central India, Bombay.
		<i>H. asperella</i> , Pfr.	Central India.
		<i>H. fullaciosa</i> , Fér.	Ceylon, South India.
		<i>H. ruginosa</i> , Fér.	Southern India.
		<i>H. crassicostata</i> , B.	Salem (?).
		<i>H. Helferi</i> , B.	Andamans.

H. CLIMACTERICA, B. No one on first examining a type-specimen of this shell of twenty-one mills. in diameter, would imagine there was any Indian shell very closely connected with it, but on examination of the small variety of from thirteen to fifteen mills., (for which I propose the term *H. geiton*, “γεῖτον”) a close relation is perceptible between it and *H. pansa*, B. on the one side and *H. ornatissima* on the other. The type form of *H. climacterica* is very peculiar, and is seen also in the smaller *H. geiton*, but in this last it is more subject to variation, so that some specimens are not much more keeled than *H. pansa*, B. whilst others unite this extreme form with the type. The main distinction seems to be, a more closed umbilicus in *H. climacterica*, than is observable in the others; a stouter shell more strongly keeled and more deeply sculptured. *H. ornatissima* whilst closely resembling the type as regards sculpture, departs from it in being less keeled, and in its umbilicus being more open, whilst *H. pansa*, B. is usually far less strongly sculptured than the type and thinner, but is more keeled and has a closer umbilicus than *H. ornatissima*. *H. anopleuris*, B. is merely a stout handsome *H. ornatissima*, on a large scale, ranging from fifteen to twenty-one mills. in diameter, my largest *H. ornatissima* being but sixteen mills. Intermediate forms there doubtless are, but the natural arrangement seems to be thus—

<i>H. climacterica</i> , B.	Khasi Hills.
<i>H. geiton</i> , Th.	Khasi Hills, (a dwarf <i>climacterica</i>).
<i>H. pansa</i> , B.*	Irawadi valley.
<i>H. ornatissima</i> , B.	Darjiling.
<i>H. anopleuris</i> , B.	Hills North of Tirhoot (Soomesur hill).
<i>H. submissa</i> , B.*	Ditto ditto.

An equal amount of variation in the keel may be often remarked

in *H. textrina*, B. some specimens of which in my possession are strongly keeled, whilst in others this character is nearly obsolete. Whatever may be thought however of my uniting such dissimilar shells as some of the above, better grounds exist for the union of some which now follow.

H. infrendens, Gould. Farm caves near Mauhnein.

H. capescens, B. Ditto.

H. Tickelli, Th. Ditto.

H. castra, B. India, Birma.

H. sanis, B. Andamans.

which is I think merely a large depressed variety of *H. castra* of fifteen mills.

H. capitium, B. Tributary Mehals of Katak.

H. hariola, B. Pegu.

I agree with Mr. W. T. Blanford in being unable to find any difference between the Katak shell and the keeled variety of *H. hariola* from Pegu, save a trifling superiority of size in the former.

GALAXIAS Beck.	{	<i>H. Tranquebarica</i> , Fub.	Southern India.
	{	<i>H. semirugata</i> , Beck.	Ditto.
		<i>H. ligulata</i> , Fér.*	Upper Bengal.
		<i>H. vitellina</i> , Pfr.	Central India.
		<i>H. bullata</i> , Hutton.	Ditto.

Of these shells, the two first are perhaps the least defined, and the whole have a tendency to pass into each other. *H. ligulata* is the well marked depressed form found in Bengal and *H. bullata*, H. of only nineteen mills in diameter, I have from Mhow. I shall now describe a few novelties which have lately occurred to me.

FAMILY ONCIDIADÆ.

VAGINULUS BIRMANICUS, H.

Corpore elongato, lævi, ante et pone eleganter rotundato, colore fusco, minutissime flavo maculato, subter albescente. Pede transversim rugoso, totius corporis longitudinis, sed vix ad quartam partem latitudinis attingente. Tentaculis quatuor; binis superioribus fuscis, oculiferis; inferioribus minus elongatis quamquam robustis, et papillam retractilem, sensu acutissimo præditam, subter gerentibus.

Habitat in locis humidis apud Rangoon, Pegu, Thait-mio, &c.

Longitudine, 50 mills.

This slug is pretty common at Rangoon and is found harbouring under potsherds, bricks and rubbish in moist spots.

FAMILY LIMACIDÆ.

LIMAX VIRIDIS, Th.

Corpore expanso, pone acuminato, flavo cinereo. Pallio magno, late colorato viridi-flavo limonis. Tentaculis superioribus, longis, pallidis, oculos parvos nigros gerentibus; et lineâ pallide smaragdina ad basin notatis. Tentaculis inferioribus minutissimis.

Habitat inter folia in dunetis marinis "mangrove" dictis apud littus Peguense, prope fines provincie Arracan.

This elegant little limax is very active and creeps about briskly on the green foliage of the salt swamps, which (*i. e.* the leaves) it resembles in colour.

In my last paper I included two limaces, *L. Memnon* and *L. Bengalsis* of which I unfortunately have no descriptions. The first is a large black slug from Hoshungabad, the other a small grey slug from Dinajpur.

HOPLITES.

This genus is formed for the reception of some large slugs, common at Teria Ghat near Sylhet. I have unfortunately no notes, but the animal is like *Vitrina* and closer perhaps to that group than to the slugs. It has a tough membranous plate on the centre of the back, conspicuous in the living animal, but no shelly plate. Its total length is about two inches.

FAMILY HELICIDÆ.

VITRINA PEGUENSIS, Th.

Animale pallide lutescente anteriori parte corporis virescente; posteriori tamen luteo-flavescente. Tentaculis superioribus longis et cum cervice virescentibus: inferioribus parvulis; Pallio granulato cutis anserinæ modo; fusco, testam omnino fere obtegente. Caudali papillâ nullâ. Longitudine 80 mills.

Testâ elongatâ, halitoideâ, politâ, subdiaphanâ; margine tenui, virescente; reliqua parte flavescente, et juxta apicem solidissimam albescente. Long. 15. Lat. 9. Alt. 4 mills. Habitat in humidis locis prope Pegu. This species belongs to the same section as *V. Gigas*, B. which it resembles in miniature and is remarkable for its very solid esclunella and apex.

VITRINA CHRISTIANÆ, Th.

Testâ sub-globosâ, tenui, politâ, diaphanâ, nitidâ, supra costulate striatâ, infra planiore. Colore succineo. Apice pallido, vix elevatiusculo. Peripheriâ rotundatâ. Aperturâ parum obliquâ. Anfractibus $3\frac{1}{2}$ lente crescentibus. Long. 13. Lat. 11. Alt. 3 mills.

Habitat in insulis Andamanicis.

I have much pleasure in naming this shell after the lady of the present Governor of the settlement, Lieut.-Col. Tytler, as a mark of esteem and in pleasing remembrance of my sojourn at Port Blair in his hospitable mansion. It is of the same type as *V. Bensoni*, Pfr. but is at once distinguished from all species I am acquainted with by its rich brown colour.

HELIX EXUL, Th.

Testâ anguste umbilicatâ, depresso conoidea, lævi, tenui, striatulâ, concolore fuscâ. Apice obtuso. Anfractibus sex, tarde crescentibus, convexiusculis, ultimo non descendente. Apertura obliquâ-Peristomate recto, tenui, juxta umbilicum leviter reflexo. Long. 16.5, Lat. 15, Alt. 8.5 mills. Habitat in insulis Andamanicis. This shell seems a *Nanina* and somewhat recalls *N. semifusca*, Dh. but is a more tumid species.

STREPTAXIS BLANFORDI, Th.

Testâ perforatâ, depressâ, ovali-oblongâ, oblique costulatâ, striatâ, translucente; spirâ obtuse conoideâ. Anfractibus sesqui-quinque non angulatis. Aperturâ obliquâ, subquadrato-oblongâ: lamellâ parietali unâ et dente singulo in mediâ parte superioris marginis. Peristomate expanso, juxta umbilicum reflexiusculo, marginibus callo tenui interdum junctis. Varietas reperitur dente carens. Long. 7.5 Lat. 5.0 Alt. 4.0 mills. Habitat montibus Arakanensibus provinciâ Pegu. *S. Andamanicæ*, B. peraffinis, sed differt dente marginali, apertura, et umbilico parum apertiore. Ab *S. Birmanica*, Bl. differt formâ minus globosâ, aperturâ et minore magnitudine.

STREPTAXIS BIRMANICA. W. Blanford, (in MSS.).

Testâ perforatâ, ovali-oblongâ, depresso-globosâ, lævi, flavescente, diaphanâ, spirâ obtuse conoideâ. Anfractibus sex convexiusculis, leviter costulate striatis; ultimo subter levigato, et circum umbilicum compresse-angulato. Sutura profundâ. Aperturâ perobliquâ, subtriangulari-quadratâ. Dente parietali unico, magno, alteroque parvulo, in parte anteriori marginis superioris posito. Peristomate expanso, reflexiusculo. Long. 9.0. Lat. 6.5. Alt. 5.0 mills. Varietas

minor invenitur deute marginali carens. Long. 8 mills. Habitat, Pegu. Var minor prope fontes fluminis, Pegu dicti.

A single specimen of this shell was received by me from Mr. W. T. Blanford, and I subsequently found two specimens of the smaller variety. It very closely approaches *S. Blanfordi*, Th. and *S. Andamanica*, but is not so depressed in form, and it differs from *S. Petiti* chiefly in its more triangularly quadrate mouth, marginal tooth and smaller size, (my largest, average, and smallest specimens of *S. Petiti* measuring in length respectively, 14.11 and 9 mills.).

The distinction however between these shells is only sufficient to constitute a well marked race. *S. Blanfordi*, Th. ranging with *S. Andamanica*, and *S. Birmanica*, Bl. with its ally *S. Petiti*.

CLAUSILIA MASONI, Th.

Testâ arcuato-rimatâ, fusiformi, tenui, costulate-striatâ, pallide castaneâ. Apice intacto. Sutura excavatâ. Anfractibus decem, sub-planatis, ultimo augustiore, supra aperturam fortiter striato, juxtaque suturam fossâ, laminæ interioris cursum monstrante, notato. Lunellâ distinctâ; interdum non. Lamellis quinque, duabus parietalibus tenuibus, distinctis, intus conniventibus; reliquorum binis fortibus ad aperturam divergentibus; tertiâ post lunellam valde tenui, inconspicuâ. Aperturâ rotundato-auriformi-solutâ. Peristomate expanso, reflexiusculo. Longitudinis 21 ad 29 mills. Latitudinis 4 ad 5 mills.

Habitat prope Tonghoo in montibus inter Provincias Pegu et Martaban.

This species varies somewhat in size and some specimens have a more slender spire than others. I have named it in compliment to the Rev. F. Mason, D.D., who kindly supplied me with specimens, and whose success, among the wild Karen tribes, will ever cause his name and that of his talented and energetic wife, to be enrolled in the foremost rank of missionary labourers in the East.

FAMILY CYCLOSTOMIDÆ.

CYCLOPHORUS ARTHRITICUS, Th.

Testâ umbilicatâ, turbinatâ, solidissimâ, striatâ, lineisque spiralibus flexuosis obscure decussatâ; sublaevi, non politâ, fuscente castaneâ fasciâ latâ, albâ medianâ, interdum circumdatâ. Interdum colore omnino albâ, spira pallide castaneâ, et fascia parvâ castaneâ sub-mediana ornatâ. Anfractibus quinque convexis, haud tardè crescentibus; ulti-

mo valde capaci, rotundato. Aperturâ circulari. Peristomate expanso, reflexiusculo, valde incrassato, continuo, intus flavo, interdum carulescente. Apice pallide purpurascendo-rubicundula.

Long. 52, Lat. 39, Alt. 37 mills. Apertura 29 mills.

Habitat in collibus nemorosis circum fontes fluminis Pegu dicti. A very solid shell with the surface rarely in good condition and rather sparsely distributed. It is barely so globose as *C. flavilabris*, B. to which it is nearly allied, and from which it differs in sculpture, form and greater solidity.

With respect to *C. patens*, Bl. I find myself unable to regard it as a distinct species or even race, but merely as an individual variety of *C. fulguratus*, Pf. as I have nowhere observed it sufficiently numerous to be viewed in any other light. Another marked variety of *C. fulguratus* also occurs with a large thin shell and white or cærulescent peristome, in some places not rarely: but it is clearly an individual variety of the predominant form. Both these varieties are good illustrations of how races originate, and [become?] eventually what most systematists would regard as distinct species; not as some would argue, by change effected by migration, or enforced to meet changed conditions of good climate or the like, but by individual aberration, and the contemporaneous up-growth of aberrant individuals into races and eventually species, as the Darwinian most correctly asserts: but not as far as I can see by any pressure of physical conditions co-relatively, as the Darwinian theory no less incorrectly argues. Some other principle, than of mere dependance on physical conditions, has yet to be discovered, before the problem of what governs variation, or in other words the "*origin of species*" can be regarded as satisfactorily solved.

PUPINA BLANFORDI, Th.

Testâ pupinæformi, politissimâ, flavescente-cornéâ. Anfraetibus quinque. Peristomate albo, non expanso. Canalibus albis. Long. 6, Diam 3.5 mills. Habitat, Pegu.

This species was forwarded to me by Mr. W. T. Blanford as a possible variety of *P. Peguensis*, B. It is intermediate in its characters and aspect, between *P. Peguensis*, B. and *P. artata*, B., to the latter of which it more closely approaches in the shape and unreflected form of its peristome. Whilst in fact *P. Blanfordi* ranks naturally as a nearly ally of *P. artata*, B., *P. Peguensis*, B. holds a similar relation to *P. arula*, B. and it is questionable if all four species will not prove to be

equally connected; *P. Peguensis* coming between *P. artata* and *P. arula*.

P. Arula, B. *P. Peguensis*, B. *P. Artata*, B. *P. Blanfordi*, Th.
POMATIAS PEGUENSE, Th.

Testâ anguste sive obtecte umbilicatâ, turritâ, costulate striatâ, translucente, flavescente-corneâ. Apice obtuso, levi. Anfractibus septem sive octo, tumidis, lente crescentibus. Aperturâ sub-circulari. Peristomate duplici, extra brevissime expanso, intus continuo, crasso, juxta suturam leviter inciso. Operculo tenui corneo.

Long. 10. Lat. 3.5 mills. Apertura 2.5 mills.

Habitat in monte marmoreo, cavernoso, haud procul a Gwa, pago littore Peguensi.

This *Pomatias* is accompanied at the Limestone hill near Gwa by the following shells which I give to illustrate the range of some of them.

<i>Helix delibrata</i> , B.	<i>Cyclophorus Theobaldianus</i> , B.
<i>H. textrina</i> , B.	<i>Leptopoma aspirans</i> , B.
<i>H. honesta</i> , Gould.	<i>Pupina artata</i> , B.
<i>H. castra</i> , B.	<i>Alycaeus scepticus</i> , Bl.
<i>H. rotatoria</i> , V. d. Busch. (small).	<i>Hydrocena pyxis</i> , B.
<i>H. bascula</i> , B. var.	<i>Diplommatina</i> .
<i>H. gratulans</i> , Bl.	<i>Helicina</i> .
<i>Plectopylis plectostoma</i> , B.	<i>Pomatias Peguense</i> , Th.
<i>Bulinus putus</i> , B. (slender var.)	
<i>B. gracilis</i> , Hutton.	
<i>Cryptosoma præstans</i> , Gould.	
<i>Streptaxis Burmanica</i> , Th.	

The *Diplommatina* I have not made out, as I got no good specimens. The *Helicina* is very variable, and as I have no doubt *H. Andamanica*, B. but two distinct varieties occur, differing chiefly in size, and both smaller than the type, (as I regard it) from Port Blair, but as some of these shells may have been described before, I refrain from naming them. They are respectively five and six mills. diameter whilst the type measures eight mills. From the Andamans, however, I have a single small *Helicina*, smaller than either of those from the mainland, and I believe all four forms are merely races, all merging into each other, but my sole specimen has gone home to Mr. Benson, who, from its vast discrepancy in size from the type he is acquainted with, will probably regard it as a distinct species. *Haud ego*.

I cannot conclude this paper without offering a few remarks on the arrangement proposed by my friend, Mr. W. T. Blanford, for the Helicoidous groups in the Annals and Magazine of Natural History for February, 1863. The division of the whole, into two great GROUPS or SECTIONS,—A marked, by having the mucous pore at the truncated extremity with a superimpending lobe, and—B having the mucous pore in the elongated non-truncate extremity, devoid of an overhanging lobe,—is a natural and probably well marked one, but I think a still farther restriction of the term *Nanina*, than that Mr. Blanford has adopted, is called for in any natural classification.

We there find (*loc. cit.*) shells of two very naturally divided types all ranged together under *NANINA* or its subgenus *MACROCHLAMYS*, B. illustrated respectively by the species, *Vitrinoides*, *lubrica* and *petasus* on the one hand, and *pansa* and similar unpolished shells on the other. A more natural arrangement would surely be to restrict the term *Nanina* to those shells of the great Section A possessing a polished epidermis, of which *N. vitrinoides* may be regarded as the type, indicative as such a condition of the surface usually is, of either lubricatory tentacular processes attached to the mouth, as in the type, or of close relations to the more typical species so provided.

This separation effected, the remainder form a natural group of which *pansa* may serve as a type, but want of all books of reference, prevents my offering any generic name, which a little research will soon supply. In this Section A, it may be remarked that Mr. Blanford includes *H. ligulata*, whilst *H. Tranquebarica* and its allies he ranges under Section B.

In the present paper I have included them, from a mere study of the shells, under one group, (*GALAXIAS*), which I should not have ventured to do in opposition to Mr. Blanford's observations, but for his remark on *H. ligulata*, which "*shows a passage into the other Section.*" It is therefore probably aberrant to some extent from *Tranquebarica*, but not more so perhaps than from the group with which Mr. Blanford has associated it. Mr. Blanford's remark on the similarity of the animals of *H. vittata*, Fér. and *H. fallaciosa*, Fér. is interesting, as a shell given to me by Mr. H. F. Blanford* tends to connect

* *H. proxima*, Fér. Besides the difference in form *H. proxima* has a white interior. *H. vittata* invariably brown or brownish black when adult. H. F. B.

these seeming dissimilar species. *H. vittata* is a very variable shell as the following measurements of specimens in my cabinet show.

A. 28 × 22 mills.

B. 24 × 18 „

C. 20 × 13 „ E. *H. fallaciosa* 14 × 6 mills.

D. 24 × 11 „

Specimens A, B and C of *H. vittata* are all from Ceylon.*

A being a very elevated var, B a depressed var, and C the ordinary small var. D is the shell received from Mr. H. F. Blanford, and though white and more of the form of *H. fallaciosa* than of *H. vittata*, yet it must, I think, be classed as a variety or local race of the last. Numerically reduced the proportions are nearly thus—

A. = 15 B. = 10 C. = 6 D. = 6 E. = 2

So that if allowance is made for a better series of specimens from which measurements might be made, we see that individuals of the type shell A and C differ nearly as much from each other, as specimen E (*H. fallaciosa*) does from C. But this method of stating the relation, very inadequately represents it, D having the aspect and size of *H. vittata*, with the precise depressed form of *H. fallaciosa*, with whose colourless varieties it may be compared, as unlike *vittata*, it is colourless and white. It would be very curious if intermediate forms should eventually be discovered more closely connecting these at first sight utterly dissimilar species *H. vittata* and *H. fallaciosa*.

Thaïet Mio, October, 1863.

* I may add to this list the extreme measurements of specimens in my own collection shewing still greater variability.

a	b	c
Diam. 17 m.m.	17 m.m.	29 m.m.
Alt. 18 m.m.	19 m.m.	22 m.m.

Specimen *a* is of uniform chestnut brown, *b* white with faint brown bands and violet apex, *c* white with flesh colored apex. H. F. B.

Errata in Mr. Theobald's paper, in No. 4 of 1863.

* Page	line	for	read	Page	line	for	read
354,	2,	leaning	bearing.	370,	12,	Borilia	Bontiao.
355,	26,	living	tiny.	375,	14,	Bensoni	Barniann.
358,	7,	focal	wild.	376,	28,	After B add	sp.
367,	32,	bora	vara.	381,	10,	etnila	rutella.

On Ancient Indian Weights.—By E. THOMAS, Esq.

[The subjoined article was sketched, with a view to the limited illustration of the subject announced in its title, for insertion in the Numismatic Chronicle: but so large a proportion of its contents have proved in the progress of the enquiry to relate to questions beyond the legitimate scope of that Journal, while they would seem well adapted for the pages of the Journal of the Asiatic Society of Bengal, that I have revised and added to the original paper, in the design of its simultaneous publication in England and in India. I am the more anxious that it should appear in the latter country, as there alone can its higher aims be suitably discussed; thence also must we seek a due definition of the indigenous plants upon whose products these weights are based, and a determination, by actual comparison of growing seeds, of the initiatory scheme of Indian Metrology. From that continent must come the further ethnological and philological evidence, which is to determine many of the questions I have ventured to raise. Wherever the final decision may be pronounced, it is clear the witnesses are still mainly in the land whose past history is under investigation.—EDWARD THOMAS].

The attention of archaeologists has recently been attracted to the weights and measures of ancient nations, by the elaborate work of M. Queipo,¹ and the less voluminous, but more directly interesting article of Mr. R. S. Poole, on the Babylonian and other early metrologies.² At the present day, when ethnological inquiries engross such an unprecedented share of public notice, any parallel study that may contribute by material and tangible evidence to check erroneous, or suitably aid and uphold sound theories, should be freely welcomed, however much its details may threaten to prove tedious, or the locality whence its data are drawn may be removed beyond the more favoured circles of research.

The system of Indian weights, in its local development, though necessarily possessing a minor claim upon the consideration of the European world, may well maintain a leading position in the general

1. "Essai sur les Systèmes Métriques et Monétaires des Anciens Peuples," par Don V. Queipo, 3 vols. 8vo., Paris, 1859. See also a review of the same, *Journal des Savants*, 1861, p. 229.

2. Article "Weights," Smith's "Dictionary of the Bible," London, 1863.

investigation, on the ground of its primitive and independent organisation, and the very ancient date at which its terms were embodied and defined in writing; while to numismatists it offers the exceptional interest of possessing extant equivalents of the specified weights given in the archaic documentary record which Sanskrit literature, under the regained faculty of interpretation acquired by Western scholars, proves to have preserved in the text of the original code of Hindu law; as professedly expounded by Manu, and incorporated in the "*Mánava Dharma Sástra*." The positive epoch of this work is undetermined: but it confessedly represents, in its precepts, a state of society considerably anterior to the ultimate date of their collection and committal to writing;³ while the body of the compilation is assigned, on speculative⁴ grounds, to from B. C. 1280 to B. C. 880.

It is a singular and highly suggestive fact that numismatic testimony should have already taught us to look for the site of the chief seat of ancient civilisation in northern India, to the westward of the upper Jumna—a tract, for ages past, relatively impoverished. For such a deduction we have now indirect, but not the less valuable, historical authority, derived in parallel coincidence from the comparative geography of the Vedic period, and from the verbatim text of Manu, the integrity of which seems, for the major part, to have been scrupulously preserved.

3. I trust that European scholars will not imagine that I desire to ignore Megasthenes' statement, that the Indians had "no written laws." (Strabo, xv. c. i. § 53.) This is, indeed, precisely the testimony—seeing the source from whence it was derived—we should expect from what we now know of Brahmanical policy. As to the addition "who are ignorant even of writing," this ridiculous assertion had previously been unlifted by the more accurate information of Nearchus (Strabo, xv. c. i. § 67), and is further conclusively refuted by the incidental evidence contained in the remarkable passage in the same work, where it is stated, "At the beginning of the new year all the philosophers repair to the king at the gate, and anything useful which they have committed to writing, or observed tending to improve the productions of the earth, &c. &c. &c., is then publicly declared." (xv. c. i. § 39).

4. Max Müller's "*Sanskrit Literature*," pp. 61, 62. "The code of Manu is almost the only work in Sanskrit literature which has as yet not been assailed by those who doubt the antiquity of everything Indian."

Professor H. H. Wilson, though hesitating to admit the high antiquity of the entire bulk of the compilation, was fully prepared to assign many passages to a date "at least" as early as 800 B.C.—Prinsep's "*Essays*," i. note, p. 222. See also Professor Wilson's translation of the "*Rig Veda Samhita*," i. p. xlvii.

M. Vivien de St. Martin places Manu under "*la période des temps héroïques*," i. e., between the twelfth and thirteenth centuries B. C., and the Buddhist epoch B. C., 543.—"*Étude sur la Géographie et les Populations primitives de l'Inde*," Paris, 1859.

The most prolific field among the favoured resorts of our native coin-collectors, in olden time, chanced to be the exact section of the country constituting the *Brahmāvarta* of the Hindu lawgiver; and *Thaneswar*—since so celebrated in the annals of the land, as the battle-field of successive contending hosts—contributed, at its local fairs, many of the choicest specimens of the inceptive currencies. In this region the Aryans appear to have almost lost their separate identity, and to have commenced the transitional process of merging their ethnic individuality amid the resident population, though still asserting religious and incidentally political supremacy. Such a state of things seems vividly shadowed forth in the ethnological definitions preserved in *Manu*; and it may possibly prove to be more than a mere coincidence, that the geographical distribution of the limits of "*Brahmarshi*, as distinguished from *Brahmāvarta*," in the same passage, should so nearly be identical with the general boundaries I have already traced, from independent sources, for the spread of the Bactrian alphabet in its Southern course.

I reproduce my latest observations on this subject.

"The Bactrian, Arian, or Arianian alphabet, unlike its southern contemporary, the Indian Pāli, has no pretension whatever to an indigenous origin; it would seem to have accompanied or followed, in its archaic and imperfect form, the Aryan immigration from Media, based as it manifestly is upon an alphabet cognate with the Phœnician. We are unable to trace its progressive adaptation from the scanty literal signs of early Semitic writing; as we first find it, in an advanced stage of maturation, in an inscription on the Kapurdigiri rock in the Peshāwar valley (lat. $34^{\circ} 20'$, long. $72^{\circ} 11'$), where it embodies the substance of the edicts of Asoka, whose corresponding manifestoes in the Indian-Pāli character are so largely distributed over the continent of India,⁵ and the general date of whose incision may be approximatively fixed at 246 B.C.⁶ How much further south this character may have penetrated at this period we have no direct evidence to show, but it is to be remarked that the same king Asoka simultaneously retains the Indian proper alphabet in his monumental inscriptions at Khizrabad⁷ and at Khalsi,⁸ near the débouchement

5. Rock Inscriptions:—1. Gīrnār, in Guzerat. 2. Khalsi, on the Upper Jumna. 3. Dhauli, in Cuttack. 4. Naugum, in Ganjam. 5. Bhabra, in Jaipur.

Monolithic inscriptions:—1. Khizrabad, on the Upper Jumna. 2. Meerut (both moved to Delhi). 3. Allahābād. 4. Rādhia, in Sārūn. 5. Mattiah, in the same locality.

6. "Journ. Royal Asiatic Soc.," xx. 101; "Prinsep's Essays," ii. 15, *et seq.*

7. "Prinsep's Essays," ii. 324.

8. "Journ. As. Soc. Bengal," 1862, p. 99.

of the Jumna from the Himalaya range; while the employment of the latter character by Agathocles and Pantaleon would imply its currency within, or proximately south of the province of Arachosia. Then again, certain coins of a kingdom on the Upper Jumna, pertaining to a native dynasty of indeterminate date," but whose epoch may not be very distantly removed from the period under review, are found to be inscribed with the Arian character on the one surface, with a corresponding legend in Indian-Pāli on the reverse. In this instance also, the internal evidence would seem to show that the latter was the alphabet of the mint artificers, while the former may reasonably be supposed to have constituted the official writing of the ruling classes. Under this view, it may be conjectured that the Arian palæography encroached upon and intermingled with the indigenous system of letters as the dominant Northern races extended their dominions, in successive waves, further into Hindustan, till the intrusive alphabet reached Mathura, (lat. $27^{\circ} 30'$, long. $77^{\circ} 45'$), which is the lowest point at which any indications of its progress are to be found.¹⁰ Whence, however, it was speedily to be thrown back, and very shortly superseded and extinguished by its more flexible and congruous associate of indigenous growth."¹¹ (Numismatic Chronicle, 1863, p. 230.¹¹)

As I have claimed for the Pre-Aryan Indians the independent development of an alphabet specially contrived for, and adapted to, their

9. "Coins of Kananda," *Ariana Antiqua*, pl. xv. fig. 23; "Prinsep's Essays," i. pl. iv. fig. 1 p. 203; *Ibid.*, ii. p. lxix. fig. 16.

10. Mathura Inscription, dated in Bactrian figures, "Journ. As. Soc. Bengal," 1861, p. 427; *Coins*, Prinsep's Essays," ii. 197.

11. I recapitulate the leading inscriptions in this alphabet:—1. Hidda (No. 13), near Jellalabad, in Afghānistān. An earthen jar, having an Arian inscription, written in ink, and dated in the year 8. "Ariana Antiqua," p. 111, and plate, p. 262. 2. A steatite vaso from Bimīrān (Jellalabad), with a legend scratched on its surface, undated. "Ariana Antiqua," pp. 52, 70, pl. ii. fig. 1; "Prinsep's Essays," i. 107, pl. vi. 3. The Wardak (30 miles W. of Kābul) Brass Vase, now in the India Museum, inscribed with dotted letters, dated in the year 51, and recording the name of Hushka, the OOHPKI of the coins; see "Ariana Antiqua," p. 118; "Prinsep," i. 104, pl. x; "Journ. As. Soc. Bengal," No. iv. of 1861; "Journ. Royal As. Soc.," xx. 37. The Taxila Plate, dated 78, records the name of "Moga," identified with the Moa of the coins; "Num. Chron.," Bactrian List, No. xxv. 5. Manikyala Stone Slab (now in the Bibliothèque Impériale, Paris), dated in the year 18, contains the designation of Kanishka; "Prinsep's Essays," i. pl. ix.; "Journ. Royal As. Soc.," xx. 251. From the same site was obtained the Brass Cylinder now in the British Museum; "Prinsep," pl. vi. To these may be added two inscriptions from the Yusafzai country, one dated 60; "Journ. As. Soc. Bengal," 1854, p. 705; "Prinsep," i. pl. ix.; and the bi-literal inscription at Kangra (Arian and Indo-Pāli), "Prinsep," i. 159, pl. ix.

[The mention of OOHPKI reminds me, that Gen. Cunningham has complained in our Journal, of my having given the credit of the identification of that name with Hushka, to another. I have already taken the very earliest opportunity of correcting this unintentional error (Journal Asiatique, Octobre 1863, p. 387.) I availed myself of the same occasion, to express my regret that I, myself, had

own lingual requirements,¹² similarly it can be shown, from as valid internal indications, that they originated, altogether on their own soil, that which has so often proved a nation's unassailable heritage of its indigenous civilisation—a system of weights and measures, which retained its primitive identity in the presence of the dominant exotic nationality. It is indisputable that the intrusive Aryans, at whatever period their advent is to be placed, met and encountered a people, already dwelling in the land, of far higher domestic civilisation and material culture than themselves. Whether their eventual supremacy was due to undiminished northern energy, animal physique, or mental subtlety, does not concern us at present; but independent of the inner-life evidences to that effect, a parallel inference might be drawn from the indirect data of the contrasted tenor of the hymns of the Rig Veda,¹³ which while indicating a crude social condition, refer almost exclusively to the country of the Seven Rivers; whereas Manu, at a date but moderately subsequent,¹⁴ associates the far higher progress manifested in the body of the work with a more easterly seat of authority, and while asserting no community with things or people beyond or to the westward of the Saraswati, arrogates for the existing representatives of the Aryans a dominance over kindred kingdoms extending, in the opposite direction, down the Ganges to Kānauj. But, in demanding credence for the simple gift of invention arising out of manifest wants among the already thrice commixed, and in so

failed to do homage for a rectification of his, to which, he, I understand, attaches somewhat of undue importance, that is to say, the substitution of an M, in the place of Prinsep's P, as the third consonant in the name of Toramana (J. A. S. B. vii. 633). It might have been necessary, in early days, to reclaim titles to discoveries made by Lieut. A. Cunningham, (J. A. S. B. 1854, p. 714.) but surely the 'Bays' of the Archaeological Surveyor to the Govt. of India can afford to lose a faded leaf with scant damage to the green circle!

12. Prinsep's "Essays," London, 1858, ii. 43; Num. Chron., 1863, p. 226.

13. Wilson, "Rig Veda Sanhitā," iii. pp. xviii, xix., London, 1857; Vivien St. Martin, "Étude sur la Géographie * * * d'après les Hymnes Védiques," Paris, 1859, p. 89.

14. "Journal As. Soc. Bengal," 1862, p. 49; Max Müller's "Rig Veda," preface to text, iv. pp. xxv.—xxxiv. "The traditional position of the solstitial points, as recorded in the Jyotisha," is calculated by Archdeacon Pratt to refer to 1181 B.C., and by the Rev. R. Main to 1186 B.C. See also p. lxxxvii. on the subject of Bentley's date, 1424—5 B.C.

For speculative dates concerning the Vedas, see also Max Müller, "Sanskrit Lit." pp. 244, 300, &c.; Wilson, "Rig Veda," i. 47, ii. 1; St. Martin, p. xix.; M. Barthélemy St. Hilaire, *Journal des Savants*, 1861, p. 53; Dr. Martin Haug, "Aitareya Brāhmaṇa," Bombay, 1863; Goldstücker, "Pāṇini," p. 72, &c.

far improved¹⁵ local inhabitants, as opposed to the Aryan assumption of the introduction of all knowledge, I am by no means prepared to contend that the domiciled races gained nothing in return. The very contact of independently-wrought civilisations, to whatever point each had progressed, could not fail mutually to advantage both one and the other; the question to be asked is, which of the two was best prepared to receive new lights, and to utilise and incorporate the incidental advantages within their own body politic? The obvious result in this case, though denoting the surrender by one nation of all their marked individuality, by no means implies that they did not carry with them their influence, and a powerful one moreover, and affect materially the character of the people among whom, at the end of their wanderings, they introduced a priestly absolutism, which has progressively grown and increased rather than lost power till very recently over all India.

But here again a most important query forces itself upon our consideration. The Aryans are acknowledged to have been in a very barbarous state on their first entry into the land of the *Sapta Sindhu*.¹⁶ It is not known how long a period they consumed in traversing six out of the seven streams, or what opportunities may have been afforded for social improvement during the movement; but even by their own showing in the sacred hymns of the Rig Veda, the Aryans, when they had reached the banks of the Saraswati, were still but very imperfectly civilised. The *Dasyus*, or indigenous races, with whom they came in contact in the Punjab, may well also have been in a comparatively undeveloped stage of national progress; while the inhabitants of the kingdoms on the Jumna seem to have been far advanced in civil and political refinement.¹⁷ Is it not, therefore, possible,

15. "We have therefore, according to the views just summarily expounded, four separate strata, so to speak, of the population in India:—1. The forest tribes . . . who may have entered India from the north-east. 2. The Dravidians, who entered India from the north-west . . . 3. The race of Scythian or non-Arian immigrants from the north-west, whose language afterwards united with the Sanskrit to form the Prakrit dialects of Northern India. 4. The Arian invaders." . . . —Muir's "Sanskrit Texts," ii. p. 487. See also Caldwell's "Dravidian Grammar."

16. St. Martin, p. 91.

17. Professor Wilson while speaking of the ultimate self-development of the Aryans in the Punjab, remarks, "It [is] indisputable that the Hindus of the Vaidik era had attained to an advanced stage of civilisation, little, if at all, dif-

if not probable, that when the Aryan flint, at the end of its course, struck against the Indian steel, sparks were emitted that flashed brightly on the cultivated intellects of a fixed and new thoroughly organised and homogeneous nation, whose leading spirits quickly saw and appreciated the opportunity afforded in the suggestion of a new religion, that was capable of being evolved, by judicious treatment, out of the rude elemental worship, aided forcibly by the mystification of the exotic and clearly superior language of the Aryans, which came so opportunely in company?¹⁸ The narrow geographical strip, to which the promoters of this creed confined the already arrogant priestly element, intervening between the two nationalities, would seem to savour more of an esoteric intention than of any natural result of conquest or of progressive power, achieved by the settlement of an intellectually higher class. That the Aryans should be able so completely to divest themselves of their national entity and leave no trace behind them, would be singular in itself; but the concentration of all god-like properties on a mere boundary line, so much insisted upon as Brahmanism grew and pushed its forces downwards into the richer countries of Hindustan, while it ignored both the land of the nativity of its votaries and the site of their later more advantageous domestication, forms a fair subject for present speculation and future deliberate investigation. But this in itself is a matter only incidental to my special subject, and I return to the question, that if the Aryans were so far instructed on their first immigration as to bring with them, or subsequently to import and amplify, the Phœnician alphabet, and similarly to secure its transmission, even as a secondary system of

fering from that in which they were found by the Greeks at Alexander's invasion, although no doubt they had not spread so far to the east, and were located chiefly in the Punjáb and along the Indus."—"Rig. Veda," ii. p. xvii. I am inclined to question this latter inference; I do not think the civilisation evidenced in the text of the "Rig Veda" by any means equal to that discovered at the advent of the Greeks; indeed, it would be an anomaly that the Aryans, while occupied in pressing their way onwards, in constant hostility with the local tribes, should have made a proportionately greater progress in national culture than they did in the subsequent six or seven centuries of fixed residence in their new home within the five rivers.

18. A late writer in the *Westminster Review* 1864, p. 154, has justly remarked that the 1026 incoherent hymns of the "Rig Veda" constituted but a poor stock in trade whereon to found a new religion. Nor do the Soma "inspired" Rishis by whom they were "*seen*" appear, from the internal evidence of their crude chants, to have possessed mental qualifications such as should have been equal to the origination of the higher intellectual structure of Brahmanism.

writing, over all the country of the *Brahmarshis*, it would be rash to attempt to place a limit on the amount of Chaldaean or other western sciences that may have accompanied these cursive letters,¹⁹ which, either directly or indirectly, travelled eastward from the borders of Mesopotamia to the banks of the Ganges. And clearly, if the grammarian *Pāṇini's* age has been rightly determined by his special modern commentator,²⁰ Bactrian writing, or *Yavanāni-lipi*,²¹ must have been freely current at Taxila at and before B.C. 543, even as it subsequently became the ruling alphabet in those parts, so as to appear as the Inscription character under Asoka (B.C. 246) in the Peshāwar valley, and to hold its own as the official method of expression in concurrence with the local Pāli as low down as Mathura up to a much later period. Under these evidences of the spread of Aryan civilisation in India, there will be little or no difficulty in admitting that much of what has hitherto been esteemed as purely indigenous knowledge, may, even thus early, have been improved and matured by the waifs and strays of the discoveries of very distant nations, without in any way detracting from or depreciating the independent originality of local thought, or the true marvels India achieved unaided by foreign teaching.

In illustration of the preceding remarks, and as the necessary definition of the boundaries of the kingdom to which our initial series of coins refer, I transcribe in full a translation of the original passage from Manu.

Manu, ii., 17.²² "Between the two divine rivers, SARASWATI and DRISHADWATI [Chitang], lies the tract of land which the sages have named BRAHMA'VARTA,

19. We have indirect evidence to show that this style of writing was in very early currency in association with the monumental cuneiform. I assume that wherever, in the ancient sculptures, we see two scribes employed—the one using a style and marking a clay tablet, the other writing upon a flexible substance—the latter is using cursive Babylonian, or what has since been conventionally recognised as Phœnician. M. E. Renan considers it is satisfactorily established, that the Jews used "phénico-babylonien" letters, at their coming out of Egypt, now placed in B.C. 1312. Renan, 'Langues Sémitiques,' pp. 108, 216, &c. Prinsep's Essays, ii. 145.

20. Goldstücker, "*Pāṇini*, his place in Sanskrit Literature," London, 1861, pp. 12, 227; so also Alwis, "*Pāli Grammar*," Colombo, 1863, p. xli.; and Colebrooke's "*Misc. Essays*," ii. p. 4.

21. Max Müller, "*Sanskrit Lit.*," London, 1859, p. 521; and preface to text of "*Rig Veda*," London, 1862, vol. iv. p. lxxiv.

22. Sir W. Jones's works, London, 1799, vol. iii.; Haughton, "*Hindu Law*," p. 22.

because it was frequented by gods.²³ 18. The custom preserved by immemorial tradition in that country, among the four *pure* classes, and among those which are mixed, is called approved usage. 19. KURUKSHETRA [modern Dohli], MATSYA [on the Jumna], PANCHĀLA [Kanyakubja, Kanauj], and SURASENA [or Mathurā], form the region called BRAHMARSHI, distinguished from BRAHMAVARTA. 20. From a Brāhman who was born in that country, let all men on earth learn their several usages. 21. That country which lies between HIMAWAT and VINDHYA, to the east of VINASANA [where the Sarasvati disappears in the desert²⁴] and to the west of PRAYĀGA [Allahabad], is celebrated by the title of MADHYADESA [or the central region]. 22. As far as the eastern and as far as the western oceans, between the two mountains just mentioned, lies the tract which the wise have named ARYA'VARTA [or inhabited by respectable men]. 23. That land on which the black antelope naturally grazes is held fit for the performance of sacrifices; but the land of MLECHHAS [or those who speak barbarously] differs widely from it. 24. Let the three first classes invariably dwell in those before-mentioned countries; but a Sūdra, distressed for subsistence, may sojourn wherever he chooses."²⁵

It is reasonable to infer that, as a general rule, all schemes of weights among an isolated people, initiating their own social laws, should preferably be based upon some obvious unit of universal access, rather than upon any higher measure of weight, which might naturally result, under authoritative legislation, from progressive increments on the lower basis. So that, in testing the intentional ratios of early times by the extant money designed in accordance with the contemporaneous tables, it will be safer to proceed from the lowest tangible limit of the scale, in preference to accepting any superior denomination as a standard whence to reduce, by division, the component elements involved. The intuitive unit of weight, among an imperfectly formed agricultural community, would naturally be the most generally

23. For the comparative geography of this tract, see Journal As. Soc. Bengal, ii. 106. Major Colvin, vii. 752. ix. 688. Lt. Baker, xiii. 297. Major Mackeson. Elliot's Glossary of Indian Terms, p. 78.

24. Muir, "Sanskrit Texts," ii. pp. 415—418. Wilson, Rig Veda Sanhitā iii. pp. xviii.—xix. St. Martin pp. 15, 73.

25. Mr. Muir has given us a new translation of this celebrated passage, which, as it differs from the above in the introductory portion, I annex in a separate note.

"The tract, fashioned by the gods, which lies between the two divine rivers, Sarasvatī and Drishadvatī, is called Brahmāvartta. The usage relating to castes and mixed castes, which has been traditionally received in that country, is called the pure usage. The country of Kurukshetra (in the region of modern Delhi), and of the Matsyas (on the Jumna), Panchālas (in the vicinity of modern Kanauj,) and Sūrasenas (in the district of Mathura), which adjoins Brahmāvartta, is the land of the Brahmarshis (divine Rishis)."—"Sanskrit Texts," ii. p. 417.

available and comparatively equable product of nature ; in the *form of seeds* of cultivated or other indigenous plants ; and in the Indian instance we find, after some definitions of inappreciable lower quantities, the scale commencing with a minute poppy seed, passing on to the several varieties of black and white mustard seed, barley-corn, and centering in that peculiarly Indian product, the *Rati*, or seed of the wild Gunja creeper, *Abrus precatorius* [Sanskrit, *Krishṇala* or *Raktika*], which forms the basis of all local weights, and whose representatives of modern growth still retain their position as adjuncts to every goldsmith's and money-changer's scales. Next to the rati in ascending order comes the *Másha*, which in its universal acceptance has almost achieved the title to be considered as a second unit or ponderable standard, and, as such, its name now primarily signifies "an elementary weight ;"²⁶ but on reverting to its earlier equivalent meanings it would seem that the term, in its original static sense, like the whole of the weights hitherto quoted, referred to another of Nature's gifts, the seed of the Indian-bean (*Phaseolus radiatus*, ماش هندي),²⁷ which, like the rati, claims especially an Indian habitat as an extensively cultivated plant ; and, to complete their associate identities, the bean as at present raised would seem to correspond with the weight assigned to it nearly 3,000 years ago, and to average about the amount of five ratis. The next advance upon the másha is, in the gold table, a *suvarna*, a word meaning *gold* itself, and which probably implies in this case the particular divisional quantity of that metal which in earlier times constituted the conventional piece or lump current in commerce. While the silver increment on the másha is designated by the optional title of *purána*, or *old*, which may be supposed to allude to the, even then, recognition of this measure of value as emanating from high antiquity ; and it is precisely the required amount in corresponding ratis of silver incorporated in the earliest extant prototype of coins I am now about to exhibit.²⁸ The

26. Wilson's "Glossary of Indian Terms," "Másha... an elementary weight in the system of goldsmiths' and jewellers' weights throughout India, and the basis of the weight of the current silver coin."

27. Wilson's "Sanskrit Dictionary," Calcutta, 1832, *sub voce*, "Masha."

28. J. A. S. B. iv. Plato xxxv. figs. 25—29. Prinsep's Essays, Pl. xx. figs. 25—29 and vol. i. pp. 53, 209, 211. Madras Journal of Lit. and Science, 1858, p. 220. Mr. W. Elliot. These pieces of metal, or "punch-coins" as Prinsep named them, average about 52 grains. I have met with one as high as 54 gr. and Mr. W. Elliot gives one at 54.2 gr. Supposing an original Mint issue at 55 grains, the authorized

higher denomination of the silver *Satamāna*²⁹ is also derived from the vegetable kingdom, but unlike the lower divisions, which are defined by single grains, this weight is produced by *one hundred* seeds of the *Alocasia Indica*. When the precise plant, which furnished the *Māna* seed for the early standard, is satisfactorily determined, the result will doubtless prove the near equivalent of 100 *Mānas* to 320 *Ratis*—which, it will be seen, comprised the identical amount required for the weight of the gold *Nishka*,³⁰ whose minor constituents are, however, formed upon a different gradational scale, though equally emanating from the conventional *Rati* unit. I need not follow the nomenclature of the larger divisions of weights in the joint tables, but before closing the inquiry I would revert for a moment to the leading point I desire to establish, that the Indians were not indebted to the Aryans for their system of weights; the latter, in fact, when tried by the test of the hymns of the “*Rig Veda*,” would seem to have been very ill versed in the *Flora Indica*, an extensive knowledge of which was clearly necessary for, and is evidenced in, the formation of the scale of proportions. Indeed, although the Vedic Aryans often invoked their gods to aid their agriculture, the result so little availed them that their efforts at cultivation were apparently confined to barley, in the raising of which even they do not seem to have been always successful.³¹

The next question to be examined is the distribution of the arithmetical numbers whereby the process of multiplication was conducted. Mr. Poole has laid it down as a law for Mesopotamian metrology that, “all the older systems are divisible by either 6,000 or 3,600. The 6,000th or 3,600th part of the talent is a divisor of all higher weights and ecins, and a multiple of all lower weights and coins, except its $\frac{1}{3}$ rds.”³²

Rati of Manu's time, would range at 1.71875 grains or allowing 56 grains for the standard, the return of the *rati* weight would be $56 \div 32 = 1.75$; an amount I am inclined to adopt upon other grounds. We must not be misled by the more modern weight the *rati* eventually attained, as it rose, in account, with the rise of *māshas* and *tolas*.

29. शत मान, Wilson makes it, शत 100, मान measure, See, however, B. मान S. मानक “*Arum Indicum*.” Carey, Hort. Ben. pp. 56. 65. Asiatic Res. x. 19. “*Mān Kachū*,” Dr. Thomson has sent me a seed of the wild *Alocasia fallax*, from Khasia, which itself weighs $2\frac{1}{2}$ grains.

30. *Nishka* occurs in second *Ashtaka* of the *Rig Veda*. Wilson, ii. p. 17.

31. Wilson's “*Rig Veda*,” i. pp. xli., lvii., and iii. p. xi.

32. Mr. Poole has favoured me with the subjoined revised list of ancient metric systems:—

The sixes and sixties of the banks of the Euphrates³³ find no counterpart to the southward of the Sewalik range beyond the inevitable ten and the included five. The system, like all else pertaining to it, had its own independently devised multiple, the *four*. Whether the first suggestion of this favourite number was derived from the four fingers of the hand, four-footed beasts, or the higher flight of the four elements, we need not pause to inquire, but the Indians have at all times displayed an unprecedented faculty for figures, and were from the first able to manipulate complicated arithmetical problems, and especially delighted in fabulous totals; but with all this they have ever evinced their allegiance to the old 4, which we find in its place of honour in the earliest extant writings and inscriptions. As the nations of the West, to meet their own wants, speedily produced a separate symbol for *five*,³⁴ and abbreviated the five perpendicular strokes of the Phœnician into <. The Indians, apart from their indigenous Pāli signs for 4, simplified the tedious repetition of the four lines the Bactrian writing had brought with it from Mesopotamia into a cross like a Roman X, which was doubled to form eight, while they left the five utterly uncared for, to follow in a measure the original Phœnician method of

	Grains.	Divisional Scale.	Authori- tative Unit.	Practical Unit. Coins.
Hebrew Gold (double)	1,320,000	$\div 100 \div 100 =$	132 gr.	
" Silver	660,000	$\div 3000 \div$	220	220 shekel.
Babylonian (full)	959,040	$\div 60 \div 120 =$	133.2	[126.7] 81.5 siglos.
		or $\div 60 \div 60 =$	266.4	
" lesser	479,520	$\div 60 \div 60 =$	133.2	
Persian Gold	399,500	$\div 3000$	133.2	129 Daric.
Egyptian "	840,000	$\div 600 \div 10 =$	140	140 Ke T.
Æginetan,	660,000	$\div 60 \div 100 =$	110	110
Attic (commercial), ...	598,800	$\div 60 \div 100 =$	99.8	
" (lowered),	558,900	$\div 60 \div 100 =$	93.1	92.3
" (Solonian),	430,260	$[\div 120 \div 100 =$	71.7]	67.5
" (ditto double), ...	860,520	$\div 60 \div 100 =$	71.7	71.7
" (ditto lowered), ...	405,000	$\div 60 \div 100 =$	67.5	
Enboic,	387,000	$[\div 6000$	$= 64.5]$	57.0 denarius.

Egyptian Copper. A.	1400 gr. = 1 Mon.	Hebrew Copper.	250 gr. = $\frac{1}{2}$
B.	700 " = 5 Ket.		125 " = $\frac{1}{4}$
C.	280 " = 2 "		83.3 " = $\frac{1}{8}$
D.	140 " = 1 "		
E.	70 " = $\frac{1}{2}$ "		

33. Sir H. Rawlinson, "Journal Royal Asiatic Society," xv. p. 217.

34. Gesenius, p. 88; M. Pihan, "Signes de Numération usités chez les Peuples Orientaux," Paris, 1860, p. 167.

IX, or 4 plus 1 = 5.³⁵ Of course the Indian table of weights had in practice to have its lower proportionate atoms accommodated to the weights actually pertaining to the seeds in each instance, but the higher gradations are uniformly grounded upon fours and tens; and to show how distinctly the idea of working by fours was fixed in the minds of men, we find the gradational system of fines in Manu (viii. 337) progressively stated as "8, 16, 32, 64." So much for the antiquarian evidences, and to prove the custom at the other extreme of the chain of testimony and its survival within a nation of almost Chinese fixity, it may be asserted that the whole vulgar arithmetic is primarily reckoned by *gandas* = "fours," and in the modern bazars of India the unlettered cultivator may frequently be seen having a complicated account demonstrated to him by the aid of a series of *fours*, represented, as the case may be, by cowrie-shells, or grains of pulse. I pass by other elements of calculation, such as the favourite $84 (7 \times 12)$ ³⁶ which might bring me into contest with the astronomers, and content myself with resting this portion of my case on the coincidences already cited, as I conclude the most ardent upholder of Aryan supremacy can hardly arrogate for that ethnic division of the human race any speciality in *fours*.³⁷

I now proceed to quote the passage from Manu defining the authorised weights and equivalents of gold and silver, which I have cast into a tabular form as more readily explanatory of the text, and as simplifying the reference to relative scales of proportion.

viii. 131. "Those names of copper, silver, and gold [weights] which are commonly used among men for the purpose of worldly business, I will now comprehensively explain. 132. The very small mote which may be discerned in a sunbeam passing through a lattice is the first of quantities, and men call it a *trasarenu*. 133. Eight of those *trasarenu*s are supposed equal in weight to one minute poppy-seed (*likhyá*) three of those seeds are equal to one black mustard-seed (*rāja sarshapa*), and three of these last to a white mustard-seed (*gaura-sarshapa*). 134. Six white mustard-seeds are equal to a

35. "Journal Royal Asiatic Society," xix. p. 12.

36. See an admirable essay on this number, under the head of "Chourasee," in Sir H. M. Elliot's "Glossary of Indian Terms," Agra, 1845.

37. M. Pictet, who has so laboriously collected all and everything pertaining to the Aryans, in his "Paléontologie Linguistique," does not even notice the number!—"Les Origines Indo-européennes," Paris, 1863, p. 665.

middle-sized barley-corn (*yava*), three such barley-corns to one *krishnala* [*raktika*], five *krishnalas* of gold are one *māsha*, and sixteen such *māshas* one *suvarna*. 135. Four *suvarnas* make a *pala*, ten *palas* a *dharana*, but two *krishnalas* weighed together are considered as one silver *māshaka*. 136. Sixteen of those *māshakas* are a silver *dharana*, or *purāna*, but a copper *kārsha* is known to be a *pana* or *kārshāpana*. 137. Ten *dharanas* of silver are known by the name of a *satamāna*, and the weight of four *suvarnas* has also the appellation of a *nishka*.³⁸

ANCIENT INDIAN SYSTEM OF WEIGHTS (from Manu, cap. viii. § 134).

SILVER.

2 ratis	=	1 māsha.		
32 „	=	16 „	=	{ 1 dharana, or purāna.
320 „	=	160 „	=	10 „ . 1 satamāna.

GOLD.

5 ratis	=	1 māsha.		
80 „	=	16 „	=	1 suvarna.
320 „	=	64 „	=	4 „ = { 1 pala, or nishka.
3200 „	=	640 „	=	40 „ = 10 „ = 1 dharana.

COPPER.³⁹

Kārshāpana.

As there are some obscurities in the detail of the weights given in Manu, I have referred to the next succeeding authority on Hindu law, the Dharma-Sāstra of Yājñavalkya, whose date is variously attributed from a period shortly before Vikramāditya, or B.C. 57 to 50 A.D.⁴⁰ His tables are nearly identical with those already quoted,⁴¹ one un-

38. "Hindu Law, or the Ordinances of Manu," by G. C. Haughton, London, 1825, and works of Sir W. Jones, London, 1799, vol. iii. Haughton's translation has been modified as above by my friend, Mr. J. Muir.

39. Mr. Muir has communicated to me the following note on the copper weight. "Kullūka Bhatta (the Sanskrit Commentator on Manu) explains that lexicographers declare a *Kārshika* or *Kārsha* to be the fourth of a *pala*." But 5 *Krishnalas* or *Raktikas* being equal to a *Māsha* and 16 *māshas* = 1 *suvarna*, and 4 *suvarnas* = 1 *pala*; a *pala* will equal $5 \times 16 \times 4 = 320$ *krishnalas*, and a *kārsha* being $\frac{1}{4}$ of a *pala*, will equal $\frac{320}{4} = 80$ *krishnalas*.

40. Lassen, "Ind. Alt.," ii. 374, 470, 510. Dr. Roer, "Yājñavalkya," Calcutta, 1859, p. 11; M. Müller, "Sanskrit Lit.," 330; Stentzler (2nd Cent. A.D.)

41. Sec. 632. Five *krishnala* berries = 1 *māsha*, 16 *māshas* = 1 *suvarna*. Sec. 363. A *pala* is 4 or 5 *suvarnas*. Two *krishnalas* are a silver, *māsha*; 16 of the latter a *dharana*. Sec. 364. A *satamāna* and a *pala* are each equal to 10 *dharanas*; a *nishka* is 4 *suvarnas*. * * Note. In the corresponding *slokas* of Manu, 10 *palas* are said to be equivalent to 1 *dharana*. We can only reconcile this by supposing Manu to refer to a gold *pala*, and Yājñavalkya to a silver *pala*. The Sanskrit commentator adds, under *Copper*, 4 *kārshas* = *pala*, 1 *pana* = *kārsha*, i. e., $\frac{1}{4}$ *pala*.

important but reasonable variant being the assignment of three white mustard seeds instead of six to the barley-corn. There are some apparent contradictions and complications regarding palas and suvarnas, and no additional information respecting the weight of the copper-measure of value, which is described in Dr. Roer's translation as vaguely as in Manu, "a copper pana is of the weight of a kársha," and as the English commentator justly observes, the tables "by no means satisfactorily define the intrinsic weight and signification of the Pana, which as the measure of pecuniary penalty" would naturally be of the greatest importance. It is to be remarked that neither Manu nor Yájnavalkya refer in any way to the Cowrie shell currency, which was clearly in these days a scaboard circulation; nor is any mention made of the tola, which subsequently plays so leading a part in Indian metrology. So much for the weights and their relative proportions *inter se*. I shall defer any examination of the corresponding equivalents in the English standard till I can apply the results to the extant coins of the period.

Before taking leave of this division of the subject, I am anxious to meet, in anticipation, an objection which may possibly strike philologists as hostile to the general position I have sought to maintain in this paper; inasmuch as it may be held that the fact of the several divisions of the static tables being expressed in Sanskrit words, should, *primâ facie*, imply that the Sanskrit-speaking "Aryans" originated the system upon which the gradational scales were based. But it must be remembered that the entire work from whence these data are derived is written in the Sanskrit language, its very exotic character justifying the inference that it was so embodied, not with a view to vulgar use, but for the purposes of a superiorly educated or, more probably, of an exclusive class. Moreover, it is to be borne in mind that the speech itself, though foreign, had for many centuries been partially introduced into the land, and constituted the chosen means of expression of the dominant religious and occasional temporal authority. But apart from these considerations there remains to me the more comprehensive question as to how much of the Sanskrit tongue of our modern dictionaries, at this time undergoing the process of formation and maturation on Indian soil, was indebted to the local speech? It can be shown from sound palæographic, as well as from philological testimony, that the intermingling Aryans borrowed Drávidian letters to improve

their *then* imperfect alphabet,⁴² adopted Drávidian words till lately classed as Aryan,⁴³ and as we have seen, by the inherent evidence of the Bactrian character, appropriated a very large amount of Indian Páli design in the mechanical construction of the vocalic and other portions of their needfully amplified Semitic writing.⁴⁴

I had written thus far, with growing doubts about the universality of the Indo-Germanic speech in India, when it occurred to me to inquire if Drávidian roots might not throw light upon the clearly misunderstood meaning of the passage in Manu, defining the value of a copper *kárshápana*. The result has more than answered my expectations, as I find the Tamil *káru*,⁴⁵ corruptly "*cash*," described as "coin, money in general," and among the details it is mentioned that *ponakáru*, *vennikáru*, and *pettalaikáru* still exist as the vernacular terms severally for gold, silver, and copper coins, while the corresponding verb *káradikka* primarily means "to coin." With these hints a new and intelligible translation of the verse कार्षापणं विज्ञेय-
स्त्राक्षिकं कार्षिकं पणः may be proposed, to the effect that a "*kárshápana* is to be understood (to be) a *coined* copper *pana*." If this interpretation will stand criticism, we have indeed the new phase of the Indian monetary system, that the earliest Sanskrit authority on such subjects extant, dating between 1280 and 880 B.C., recognises as an ordinary fact the institution of *coined* money, while the context proves how much of Drávidian civilisation still remained in the Upper Provinces, and how little competent subsequent Sanskrit commentators on Manu's text were to appreciate anything beyond their own confined views and conventional teachings.

42. Norris, R. A. S., xv. p. 19. "The Scythic Version of the Behistun Inscription of Darius," Caldwell, "Drávidian Grammar," pp. 43, 107, 111; Prinsep's "Essays," ii. 151.

43. Caldwell, p. 438; Muir, "Sanskrit Texts," ii. p. 440.

44. Num. Chron., 1863, p. 232; Prinsep's "Essays," ii. 146.

45. Wilson, "Glossary of Indian Terms," *sub voce*.

On the Language of the Si-áh-pos'h Káfirs, with a short list of words ; to which are added specimens of the Kohistání, and other dialects spoken on the northern border of Afghánistán, &c.—By Captain H. G. RAVERTY, 3rd Regiment, Bombay N. I.

In the beginning of the year 1859, some time after my paper entitled "NOTES ON KÁFIRISTÁN" had been submitted to the Society, but previous to its appearance in the Journal,* the Rev. Dr. E. Trumpp, of the Church Missionary Society, residing, at that time, within the cantonment of Pes'háwar, was allowed to examine, through the Commissioner of that district, three men, said to have been of the Káfir race—that is to say, what we call the Si-áh-pos'h Káfirs—who had been brought to the district from Panj-korah or its neighbouring hilly tracts, for the purpose of being enlisted into the British service.

These three men remained at Pes'háwar for "a few days," during "three or four hours" of which Dr. Trumpp examined them, through a man named Muhammad Rasúl, a Kohistání of "Panjkore" as the Doctor terms it, but correctly, Panj-korah.† This man, who was not an Afghán, since the Doctor calls him a "Kúhistání," "spoke Pushto and a little Persian," and acted as interpreter between the Missionary and the so-called Káfirs; and from this short and round-about conference, a short grammar of the language has been made, and a list of seventy-seven Káfir words appended.

It is not my object to criticise the former at present, but to give a list of Káfir words, which I collected some years since, and which I intended to have given with my "Notes on Káfiristán." To these words, for the sake of facilitating comparison, I have also added some Kohistání words, which I collected about the same time, together with a few in the Pashai, Báarakai, Kásh-káirí or Chitráli, and Belúchki languages. I would have given the Pushto equivalents of these had space permitted, but they may be easily found in my Dictionary of the language, together with the other words, of which there are often more than one, bearing the same signification.

From what is stated respecting the appearance of these three men, that "they were in all respects like the natives of the upper provinces of India, of a swarthy colour, with dark hair and dark eyes," I should

* No. 4 of 1859.

† See my paper on Panj-korah in the last number of the Journal.

hardly think they were real Káfirs; and should consider that, in all probability, they were *nínchahs* (ننچاه) or "half-breeds," as those people are designated who have sprung from the mixture of Afgháns with the aborigines of the parts to the north of the Kábul river; viz. the Káfirs, Lamghánís, Shalmánís, Deggauns, Gújars, Suwátís, &c., and with each other; for the Afgháns, as we know from their histories, as well as from the accounts of Persian and Hindústání writers, have been in the habit of applying the Arabic term "Káfir," or "Infidel" very indiscriminately, particularly to the aboriginal people of Afghánistán bordering upon the Kábul river and its tributaries, and the people of the Alpine Panjáb nearest the Indus. Hence, with them, the term Káfir might as well refer to the Lamghánís, or Shalmánís, before conversion to their own faith, as to the people whom we know by the name of *Sí-áh-pos'h Káfirs*. Lieut. Wood, when on his journey to the source of the Oxus, passed close to their frontier, and he, moreover, saw and conversed with *Sí-áh-pos'h Káfirs* (for they are friendly with the people of Bádakhshán), and he describes them as being very different to the "swarthy coloured people of the upper provinces of India, with dark hair and dark eyes," such as Dr. Trumpp speaks of.* What makes me think that these three men could not have been real *Sí-áh-pos'h Káfirs*, is the fact of their having come to Pes'háwar otherwise than as slaves. Both males and females—the latter in particular, on account of their fair complexions and beauty—are to be found in the dwellings of the Afgháns of the better class, in the *Samáh* of the Yúsufzís, but they are always slaves; and some will be found in the Pes'háwar district also; but they are very different to those the Missionary describes. The *Sí-áh-pos'h Káfirs*, are too hostile to, and hate the Afgháns and other Muhammadans of those parts too much (except perhaps the people of Bádakhshán, as already mentioned), to meet them, or to enter their boundaries, save as enemies, or when, as slaves, they are compelled to do so. If these men were not actually *Nínchahs* or *Kohistánís*, of which, I have little doubt, they may possibly have been *Báris*—a certain class or tribe among the *Sí-áh-pos'h*, who are held in the light of *Páriahs*. An account of these will be found at page 36 of my "Notes on Káfiristán" already referred to; but if the *Kohistání* words I have given be ex-

* Dr. Bellew also met Káfirs when in Afghánistán in 1857. See his excellent work.

mined, and compared with the short list given by the Missionary, it will be found that what he terms Káfir, are the same words as my Kohistání, with but slight exception; whilst what I term Káfir agree with the list (as far as it goes) given by Sir A. Burnes in the Society's Journal for April 1838, and are synonymous with those given by Mr. Norris (the Honorary Secretary of the Royal Asiatic Society) as an appendix to Dr. Trumpp's paper,* which were procured at Teheran from a Káfir woman residing in that city.

The Doctor says he "was very desirous to know by what name they called their own country, as Káfiristán is a mere Muhammadan appellation;" and that "the name they gave for their country was *Wámasthán*, a word, as I found, known to the Kúhistánís too, who designated it by what is called in Persian Kúhistán, or the *highlands*."† He then proceeds to give, or rather to *make out* a signification for the word, and applies it to the whole tract forming the culminating ridges of Hindú Kush, as far west as Báikh, in as plausible a manner as the "*Heydiddlediddlethecatinthefiddle*" inscription is edited and translated in one of the early numbers of Fraser's Magazine for the present year. He will find, however, that there is a tribe of *Sí-áh-pos'h* Káfirs called by the name of Wámah, and one of their villages is so named. An account of them and their district will be found in my paper.

Dr. Trumpp states, at pages 5—7 of his article, that the Káfir language, like the Pus'hto, has a short indistinct (?) vowel sound approaching the English *u* in *but*, or the German *ü*; and that "it is not given in my Pus'hto Grammar (1st Ed.) though well known and even marked out by the natives themselves." He then goes on to say, a few paragraphs further on, that he "first mistook this sound for a short *i*, but soon found that it was a peculiar swift *a*, or in fact an indistinct vowel between short *a* and short *i*." He then states, that "the sound of Káfir *a* can only be compared to the peculiar indistinct sound in Pus'hto; as *اوده سړي* (*mas.*) and *اوده شنه* (*fem.*), which can only be learnt by hearing." To what sound in these four

* "On the Language of the so-called Káfirs of the Indian Caucasus.—By the Rev. Ernest Trumpp, D. Phil., Missionary of the Church Missionary Society." Journal of Royal Asiatic Society, Vol. XIX. for 1861.

† The word "Kohistán" is applied to all mountain tracts by the people of these parts—there is the Kohistán of Kábul, the Kohistán to the north of the Suwát river, &c., and not to "Kooner" only, as the Doctor calls it (*Kunir* he means).

words does he refer? to the first word, or the second; to the beginning, middle, or termination of these words? The explanation he gives will, I am sure, be perfectly unintelligible to all who do not happen to understand Pus'hto thoroughly; I think I can clear up the point. The Missionary refers, no doubt, to the adjective *أود* which takes a different sound before the final consonant for masculine and feminine nouns; and this peculiar vowel sound only occurs, either in the case of nouns, adjectives, and verbs, before the final consonant of a word. It will be found fully explained in my Grammar, in the declensions of nouns, in the word *غل* "*ghal*" a thief; in the word *سخوند* "*skhwandar*" a steer, in the fifth variety of nouns of the 6th Declension; in the terminations of adjectives of the same class; and in the terminations of some verbs. I have always written it, in the second edition of my Grammar, as explained by the Afghán author of the "*ÆJAIB-UL-LUGHAT*"* gives it; viz., as a compound sound of short *a* and *i*. Thus in the example which Dr. Trumpp gives (which, in fact, is no example at all, since he places the short vowel point (◌) — "*a*" — over both the adjectives he uses), the first should be written *أود* (*ú-dah*) (mas.) and the second *أود* (*ú-dah*) (fem.). In the work just quoted, the author states,—"The word *أود* is an example of this peculiar sound. When written with simple *r*, *á*, quiescent *gh*, *l* with the short vowel *a*, and unaspirated *h*, or "*há-i-khafí*," it is the third person feminine singular—"she goes;" and when written with simple *r*, *á*, quiescent *gh*, *l*, with a short vowel approaching, to *a* and *i* slightly sounded, and unaspirated *h*, it is the third person masculine plural." These are the exact words of the author as I have given them in my Grammar. The vowel (◌) (*fat'hah*) with (◌) (*hamz(ah)*) combined — ◌◌ = (◌) give an equivalent sound, as near as possible, which I have therefore adopted. It will be found written thus in the same manner in my Pus'hto Dictionary, in scores of words. The Afgháns, of course, mark it in speaking; but in writing they do not mark it: it is supposed, that a person acquainted with the rules of the language will read and understand it accordingly.

I may mention, that the Doctor has made some considerable errors with regard to the Pus'hto examples he has given. In the words *أود* *سرئي* and *أود* *شخه* for example. By the word *سرئي* he evidently means a man; but if so, the letter *ر* is not correct: it should

* See my Grammar, Introduction, pages 34 and 84.

be Afghán سَرَي = سَرَي The word for woman should be with Afghán بن not with Persian ش and with *fat'ha'h* (ـَ) not with *kasrah* (ـِ)—*shidzah*, not *shidza*. The pronunciation according to the Doctor's account would be *shidzah*, whilst the Afghán pronunciation is, *k'hadza'h* by the Eastern, and *s'hadza'h* by the Western tribes, the peculiar Afghán letter بن being widely different from Persian ش.

He considers the Káfir language to be “a *pure Prákrit dialect* ;” yet, a few pages further on, he says :—“Note.—I have not been able to come to any conclusion in regard to the *gender of nouns*. I doubt greatly if any gender be distinguished, as I have not been able to find out any trace of it. So much is clear, that adjectives are not subject to any change, either in regard to *gender* or *case*.” If such be the fact, how can the Káfir language possibly be a “*pure Prákrit dialect* ?”

With reference to the Pashai and Bárakai words which follow, I may mention, that the Pashai language is spoken by the people of that name, who inhabit some of the small districts of the hilly country bordering Káfristán on the south-west, and on the left, or northern bank of the Kábul river, between Jellálábád and Kabul. The Pashais are counted among the aboriginal people of the country, which the Afgháns are not.

The Bárakais, who are not Afgháns, are included among the people termed Tájiks (supposed to be of Arab descent,) dwell at, and round about Káuígoram, as we generally find it written in English, but properly, Kání-grám, and about Bárak in the province of Loghar, and But-Khák on the route between Jellálábád and Kábul, south of the river of that name.

I shall say nothing here about comparison of the words which follow, although I recognize a great many. It would be unfair towards that class of philosophers called “Comparative Philologists,” who, if they set to work, may discover something wonderful among them, which none but themselves can understand.

It is necessary to say a few words respecting the orthography. The system is the same as used in my Pushto works ; viz. that known as Sir William Jones's. The only difference is for the peculiar sounds similar to the Afghán letters, viz ; *dd* for د, *rr* for ر and *s'h* and *k'h* for بن

English.	St-ah-pos'h.	Kohistání.	Pashai.	Báarakai.	Belúchki.	Kásh-kári.
A man	man-chí	ádam	pan-jai	sadaiki	mard	rug
A woman	is-fíri	áo-rat, istrí	zá-ff	dadai	zál	kumrí
Father	tah-lah	bá-wah	tá-tai	máw	áyá	
Mother	no-rú	á-e	ái, pultem	khwár	a-ya'í	
Brother	burá	sahal	lá-yá	marzá	barás	
Sister	sús	bál-karí	sá-yá	kalának	ghúwár	duk
Boy	á-jistah	jágh-kate	bálakúl	zarigay	chuhwaro	kumeru
Girl	jík	buddan-bé-wah	wá-yá, lawní	bábá	chuhwarí or jan-	[kah
Grandfather	wá-wa	buddan-á-e			ná-ná	
Grandmother	wá-wai	shahír	ghoddá	yásp	ná-ni	
Mother-in-law	chach-hí	jámai	{ addá (m.)	{ nar-go'e (cow.)	zá-yan	as-tor
Father-in-law	sú-sur	istrí } gorú	{ gá (f.)	{ mád-go'e	khá-yar	leshú
Son-in-law	za-má	kulank		úgh	terro	
Male } Horse	wú } usp			khár	la-ka	
Female }	istrí }			bak-rí	buz	
Bullock	gáo			{ barátá (m.)	ridd	
Cow	istrí-gáo			{ barátik (f.)	gor-ánd	
Camel	ush-túr	ush-tur			sú-ar	
Ass	nít	kúr	{ khartá (m.)		billí	
Goat	u-sah	pújz	{ khartí (f.)		pahohar, pahash	
Sheep	munshal	barú	{ so-ata (m.)			
Lamb	barrú	duknú	{ phá-jaddik (f.)			
A pig or hog	jánú-rú	sur	únddarik			
A cat	sh'pash	pas'hak				
A kid	palami					

Fish	masih	mut'h	máchh	má-hí	maechhi	
A sparrow	man-gasht	pickin		kouk	churi	
A partridge	gyu-wai	gyu				
Crane	shin	shun			grugá/h	
A crow	koruk	kaika			a-sak	
A deer	shindú (m.)	sarú	tá/dá	á-hú	ruhoh	
A roe	marrah (f.)		led/dhi			
A jackal	walaey	sál-tti	lawich			
A otter	hú	hú				
A fox	ál-wakí	lambá-hí			mushak	
A rat	mishak	músh			báz	
A hawk	busin	warandú juro				
A falcon	ash-lak	boz		kairs		
A bear	rich	unch		toawi	rawsh	
The sun	sú	sir		mar-wok'h	máh	
The moon	inás		máe	báran	hor	
Rain	weska	dámún	wágh		juhrratt	
A cloud	ná-rú, mai-ár	ttúnak	abali	ros'h	ros'h	
Day	karah-yáo	jai	dewás	gha	shaf	
Night	rad-ár	wila	wyál			
Morning	dil-kín	isabar			namá-shám	
Evening	trim-shí	trim-shíh	bakutá, gan/d	sturra		
Great	jíht-rú	jish/tarú	chontá, kam	zari		
Little, small	achah-tú	sirah-lú	im			
Snow	zain	sim	asal			
Hail	wát	á-shín	wádd	gap		
Stone	umúrey	zúm	silá			
Clod of earth	ám-rrey	dukú			daz	
Mud	palál	shu-lú				
Earth, dust	wát-palál	pú				
Sand	dúaw	sihel	dár	gon	dár	
Wood	alah-angáo	dúr	an-gár	aron	ás	
Fire	a-wi	ingwur	wark	wok'h	áf	
Water		wuruk				ág angr

English.	Sí-áh-pos'h.	Kohistání.	Pashai.	Bárákai.	Belúchki.	Kásh-káí.
Bread	phayásh	áh-á	au	warosht		
Milk	zú	chír	chír	pikakh		chír
Butter	nú-hey	núni	núnu	maská		
Clarified butter	anaw	kost		run		
Rice (husked)	kashr	t-shúl		w' rizza	chával	
Wheat	gúm	gúm	gom	ganum		
Barley	ay-pas	j-zú		spag		
Pulse	mosh	músh				
Bean or pea	siw	siw		ghip		
Coagulated milk	cher	jughrút				
Butter-milk	niwah	kar-wú				
Kind of cheese	k'rút	k'rút	chír		gilim	
Carpet	zane-júwo	zilim			wángá	
Felt (cloth)	pilas	namad			hil	
Fowl	ki-khar	kukur		kirji	khar-gosh	
Duck		murgh-áwi				
Kite		musl-dáá				
Hare		chúsak				
Quail		shuyúl				
Lip		úshtá				
Breast		sind	dár	lab		
Shoulder		chika	sina	sina		
Hand		ás-tún				hast
Foot	chapálpain	poe	pá			pong
A year	kur	kúl			sál	
Hail		ashín				
Charcoal		askavúr				
A dog		shunak				
Frog	tún	moku				
God	doyham					
Thunder*	crankias					

English.	Si-áh-pos'h.	Kohistání.	Pashai.	Bárákai.	Belúchki.	Kásí-káí.
A feather	pút					
Grape	diráth					
Apple	párrurra		dashik	an-gúr	darákah	durut
Peach	s-rú		marne			
Pomegranate	árr-mú		amirik	anár	anár	
A sloe	am-lúkey				æunnáb	
The jujube	ká-mú		baho			
Quince	bihí		kashaddi			
Apricot	sirah		wirambú			
Mulberry	kink-lík					
Walnut	link					
Almond	lútti					
Red	ziney		simek	sú-g/a	suhar	
Yellow	zú-chárwah		pelá	zedál	zard	
White	kashrey		shlek	ispenk	sawes	
Black	jzey		sámek	gharása	sí-áh	
Green	súh		alíná	shin	sabz	
Mountain	garrah			girí		un
Forest	kándú					jungal
Tree	kattah, ushtun			darakt		kun
Flower	gulah		kaldí			gulah
Thorn	palaw	shúláh	pinjá			
Narcissus	sharri					
Unhusked rice	shálí	shúl				
Maize	ju-ár	ju-ár			juwár	
Blanket (of wool or hair)	buzey	dditt				
Fine cotton cloth	páj	páwuk				
Cotton	bijrik	pacháiy				
Thread or yarn (silk or cotton)	pichij	súnú	pach	pambah		bandíká

English.	Sí-áh-pos'h.	Kásh-kári.	Kohistání.
Sword	tar-wálf	kongur	
Iron			chamún
Axe	cha-wí		wáttí
Shield	karai	huri	
Soldier	as-tah		
Chief	sal-manash		
Troop	kat-kai		
Wall	bar-kán		
Matchlock			to-bákh

*Some Persian Inscriptions found in Srinagar, Kashmír.—By the late
Rev. I. LOEWENTHAL.*

I. THE MOSQUE OF SHAHI HAMADÁN.

As the traveller glides up the placid Jelum from Báramula, and passes under the cedarn bridges of Srinagar, wondering at the tall, gable-roofed, many-storied houses on the banks, with their unoriental profusion of windows, his attention is arrested by a curious building on the right bank between the Fateh Kadal and the Zaina Kadal (bridges), which, if he enters Kashmir from the west, he will not readily guess to be a mosque, having probably passed by unnoticed similar buildings at Shádarra and Báramula. The pyramidal roof, broken into three equal portions, ending in a most curious steeple resembling a belfry, with gilt bell and heart-shaped ornaments at the top, the four corners of the roof adorned by wood tassels, the projection of the roof beyond the walls of the building;—all this reminds one more of a Chinese pagoda than of a Mohamedan place of prayer. The impression one receives from the structure leads to the idea that the period of the erection of the building may have been one in which an older form of building, that of the Hindu temple peculiar to the valley, was still influencing the architects to whom Mohamedanism was as yet comparatively new.

The building may be said to be constructed entirely of wood. Massive beams of the indestructible Himalayan cedar placed upon one another, the interstices being filled up by small bricks, form a solid square whose sides are relieved by well-proportioned balconies in the upper story, the floors and roofs of which are supported by light and graceful carved wooden pillars.

Curious as is the appearance of the building, its history seems as curious. At every turn in Kashmir one meets with evidences of the policy of the Mohamedans to turn idol-temples into mosques, tombs, and shrines. This place is an instance. There was on that spot a famous spring sacred to Káli with (probably) buildings over and around it. Sikandar called Butshikan (idol-breaker), the grandson of the first Mohamedan king of Kashmir, built the present structure with the rich property belonging to the Hindu temple, as a *خانقاہ* for the numerous Sayids who are said to have come into the country with Sháhi Hamadán, and who were adopting a monastic form of life. After the death of Sháhi Hamadán, a shrine in his memory was erected over the very spot where formerly the sacred spring welled up. It is not uninteresting to compare with this the practice of other countries, such as the tradition which existed in Rome concerning the sacred well under the Capitol, and that under the temple of Apollo at Delphi; or the fact that, in the time of Hadrian a temple of Jupiter-Serapis was erected on the place of the crucifixion, and one sacred to Venus-Astarte over the real Holy Sepulchre:

For five centuries now have the Mohamedans of Kashmir been in possession of this spot consecrated to the memory of the Hamadán Sayid. Shall any one dispute their right to hold it now? Yes. The Hindus of Kashmir—they are almost all Brahmans—whatever else they have forgotten of the history of their country, have not forgotten this spring of Káli. The Dharm Ráj—the rule of a Hindu king—has been restored to them; the present ruler moreover is a *devout* Hindu; and they are claiming their sacred spring. Twice already have the Mohamedans had to redeem their shrine, but this has not saved them from a great indignity. On the wall fronting the river, which wall really belongs to the mosque, the Brahmans have put a large red ochre mark as the symbol of Káli, and Hindus may be seen rubbing their foreheads and employing the forms of idolatry but a step or two

from the spot where the Mohamedan is now only allowed to whisper :
 " God is great !"

The news that a Mohamedan had usurped the throne of Kashmir reaching the countries to the West caused a large influx of Sayids and other holy characters into Kashmir. Mír Sayid Alí Hamadání, subsequently known as Sháhi Hamadán, came to Kashmir a *number of times*. This consideration reconciles the discrepant statements of the native historians that he came from Bokhara, that he came direct from Hamadán in Persia, and that he came from Baghdad. Bírbar Pandit Káchrú states that he came to Kashmir in 782 H. (A. D. 1380) for the third time. This date appears to be more correct than that given by Captain Newall in the Journal for 1854, p. 414. He mentions, on native authority, the year 790 H. (1388) as the date of his *first* arrival apparently. This cannot be true, if the inscription over the door of the mosque Sháhi Hamadán is correct, which gives as the date of his *death* the year 786 H. (1384). There is, however, great confusion in all the dates of Kashmirian history. Thus, Captain Newall, on the authority of Kashmiri historians, places the first usurpation by a Mohamedan of legal power in Kashmir in 1341, whilst Baron Hügel, following Abul Fazl, mentions 1311 as the year of Shamsuddín's accession to the throne. Haidar Malik Chadwaria gives the titles of two books, the *شمه مذوق* and the *شرح سراجي*, which the Sayid wrote at the request of Sikandar Butshikan. He died, during one of his journeys, in Pakli, a beautiful valley now belonging to the British district of Hazára. There is a mysterious-looking structure about halfway between Abbottabad and Mánasihra, which we may, in default of any information concerning it, fix upon as the tomb of Sháhi Hamadán.

The readiness with which a people forcibly severed from idolatry passes over to hagiolatry, may be seen from three inscriptions at the entrance of the mosque of Sháhi Hamadán, copies of which are sub-joined.

1. Large letters on a ground of gold.

هر فیض که در سبقة هردو جهان است
 در پیروئی حضرت شاه همدان است
 شاه همدان بلکه شهنشاه جهان است
 ای خاک بران دیده که در ربیب و گمان است

Translation.

Every advantage existing before either world
 Is obtained by the followers of Haarat Sháh of Hamadán;
 Sháh (king) of Hamadán, or rather Sháhansháh (emperor) of the world.
 A curse on the eye which looks on with doubt and suspicion !

2. In Arabic characters on a ground of gold.

تاریخ وفات وی
 چو شد از گاه احمد خاتم دین ز هجرت هفتصد و نمانین
 برفت از عالم فانی بباقي امیر هر دو عالم آل یاسین

*Translation.**Date of his death.*

In the year 786 from the time of Ahmad, the seal of religion (that is) from the Hijra, there went from the transitory to the eternal world the prince of both worlds, the descendant of Yásín.

Note. "The descendant of Yásín," آل یاسین, a curious expression to denote the descendants of the prophet. *Yá Sín* یاسین is the name of the thirty-sixth Sura of the Koran, which is so called from the fact that these two letters mysteriously stand at its head. Their meaning is uncertain. The Sura itself is considered particularly sacred by the Mohamedans, and is read by them over dying persons: they say that Mohamed called it "the heart of the Koran."

3. Inscription in crimson characters.

ایدل اگر مطلب فیض دو جهانست رو بر در شاهنشاه شاه همدانست
 مقرون اجابت زدر اوست دعا را عرش است درش بلکه از عرش نشانست

Translation.

Oh heart, if thou desirest the benefit of both worlds,

Go, it is at the gate of the emperor Sháh of Hamadán.

At his gate prayer obtains an answer ;

His gate is the heavenly pavilion ; nay, the pavilion is a type of it.

II. THE TOMB OF ZAINUL'ÁBIDÍN.

Some little distance from the Sháhi Hamadán mosque down the bank of the river there are some remarkable massive remains of the outer wall of a Hindu temple—mentioned by Col. Cunningham in his *Essay on the Aryan Style of Architecture*—with its trefoil arches and sculptured Hindu divinities. The temple itself disappeared before the fanatical zeal of the early Mohamedan kings, and the inner space was

converted into a graveyard for royalty. There is only one *large* tomb (or rather the ruins of one) in this inclosure, and this is said to be the tomb of Zainul'ábidín, called Jaina-laba-dína in the Sanskrit history of Kashmir which forms the sequel to the Raja Tarangini. The tomb somewhat resembles in its general outlines, though on a much smaller scale, that of Anárkalí at Lahor. It is now used as a Government granary. It is surrounded by a large number of smaller tombs. Over a postern gate there is the following inscription :

در زیارت روضهٔ اجداد خود سلطان حبیب
دیدوگفت این جای شاهان تنگ گردد عنقریب
صفه و دروازهٔ دیگر بپهلویش فزود
تا ازین روضه نگرود هیچ شاهی بی نصیب
گاه تعمیر بنای نو شنیدم از سروش
سال تاریخش مزار ثانی سلطان حبیب

Translation.

On visiting the sepulchre of his forefathers, Sultán Habíb
Saw it and said : This royal place will soon become too narrow.
He erected another daïs and door by its side,
So that no king might fail of the blessing of this Sepulchre.
At the time of erecting the new building I heard by inspiration
The year of its date: "The second sepulchre of Sultán Habíb"—981.

Note. This date also evinces the uncertainty of the dates in Kashmirian history; for according to Captain Newall (*A Sketch of the Mohammedan History of Cashmere*, J. A. S. 1854, p. 426.) Habíb was killed long before this date, in A. D. 1557. The native historians, at all events, put his deposition nearly twenty years before the date of the inscription. Narayan Kol states that Habíb Khán became king of Kashmir in H. 960. In 961 he committed great mistakes in the administration of justice, so that the pillars of the state became ashamed of him. Hence Alí Khan put the crown on the head of Ghází Khan, his brother (both being uncles of Habíb by his mother's side); this was the beginning of the Chak dynaty. Hügel gives Chak as an abbreviation of Chaghatai. 'Ázam, another historian of Kashmir, puts the beginning of the Chak dynasty in the year H. 962; he calls Habíb the son of Ismaíl Sháh, whilst Narayan Kol gives Shamsuddín (Ismaíl's brother) as the name of his father.

In a corner of this same graveyard there is a large slab with an inscription which is remarkable as being connected with the first recorded visit of an Indian Officer to the valley of Kashmir.

Inscription.

میرزا حیدر کورگان ابن میرزا محمدحسین کورگان ونواسه یونس خان
خانہ زادہ بابرپادشاه ویزنه ابو سعید خان بادشاه یارکند و مغلوستان این
یونس خان مذکور از اولاد توغلوق تیمور خان از نسل چغتائی این چنگیزخان
مولد میرزا وقت محمود سال نہ صد و پنچ ۹۰۵ در شہر اوراتبدہ و بعد تصاریف
زمان بحکم ابو سعید خان از یارکند برآمدہ پس از تسخیرتبت درہمان سال
باچہار ہزار سوار بتاریخ روز چہارم از ماہ شعبان سنہ ۹۳۵ فتح کشمیر کردہ باز
بمحمد شاہ کہ بادشاہ کشمیر بود دادہ نزد ابو سعید خان کہ تبت ماندہ بود
رفت خان اورا مامور لاسہ نمود خود یارکند کوچ کردہ در راہ مرد تفرقہ
کلی بمیرزا رودادہ بہ بدخشان رفت باز بہند نزد ہمایون بادشاہ رسید درجینی
کہ پادشاہ منہزم بایران میرفت میرزا باچہار صد و پنچاچہ سوار از لاہور برآمدہ
در بست و دوم رجب سنہ ۹۷۴ دوبارہ کشمیر را گرفتہ نادہ سال حکمران بود
از قضای الہی سنہ ۹۸۷ بغلط از دست احاد الناس شہادت یافت میرزا بلاد
توران و مغلوستان و ہند دیدہ و بخدمت بزرگان رسیدہ باہر اکثر ہنر و سخنور
و جوان دلیر و صاحب تدبیر بود تاریخ رشیدی تالیف اوست بموجب فرمایش
ولیم مورکرافت صاحب بہادر میر آخور باشی دولت انگلشیہ باہتمام سید
عزت اللہ خان صورت احوال ہا سنہ ۱۲۳۸ از روی طوایر بتحریر تاریخ سنہ
۱۲۳۸ یازدہم جمادی الثانی سنہ ۱۲۳۸ یونٹ ٹیل دیباچہ اثبات شدہ

Translation.

Mírzá Haidar Gúrgán, the son of Mírzá Mohamed Husain Gúrgán and grandson of Yúna Khan (who was born in the house of Baber the king), and brother-in-law to Abú Sa'id Khan, king of Yárkand and Moghulistán, the son of Sultán Ahmad Khan, the son of the above-mentioned Yúnas Khan, of the progeny of Toghlúq Taimúr Khan, of the race of Chaghatai, the son of Changíz Khan. The Mirza was born in the time of Mahmúd, in the year 905, in the city of Orátapa. After various vicissitudes he, at the command of Abú Sa'id Khan, made an incursion from Yárkand. After subduing Tibet he conquered Kashmir with 4000 horse, in the same year, on the 4th Sha'bán 935. He then gave it back to Mohamed Shah, who was the king of Kashmir, and went to Abú Sa'id Khan, who had remained in Tibet. The Khan ordered him to Lúsa. He himself having set out for Yárkand, died on the road. As there appeared to be general dis-

cord, the Mirza went to Badakhshán, and then to Hindustan. He came to the Emperor Humáyún as the latter having been defeated was proceeding to Iran. The Mirza went on another expedition with 450 horse from Lahor, took Kashmir again on the 22nd Rajab 974 and ruled Kashmir for ten years. He was accidentally killed by some man in the year 987. The Mirza had seen the cities of Túrán, Moghulistan, and India, and been engaged in the service of the great. He was skilled in most sciences, eloquent, brave, and wise in counsel. The Táríkhí Rashídí was composed by him. By the order of Mr. William Moorcroft, Vety. Surgeon under the British Government, Sayid Izzat Ullah Khan compiled from records an account of the events to the year 1238. The preface was written on the 11th Jamádussání 1238 Yúnt I'l.

Note 1. The expression "Yúnt I'l" denotes the seventh year of the cycle of twelve, current in the chronology of the Arabians, the Persians, and the Turks (or Moghuls), though each nation has its own denominations for the different years. The Ayíni Akbarí gives a full account of these cycles, which were employed for the adjustment of intercalary periods necessitated by the disagreement between lunar and solar years. The Turki cycle was also called I'ghúrí (Oighur is the Russian spelling of the word). The names of the different years are the names of certain animals. They are as follows :

- | | |
|---------------------|----------------------|
| 1. Sijqán—a mouse. | 2. U'd—a cow. |
| 3. Páras—a panther. | 4. Tawishqán—a hare. |
| 5. Lúí—a crocodile. | 6. Yílán—a snake. |
| 7. Yúnt—a horse. | 8. Qú—a sheep. |
| 9. Bích—a monkey. | 10. Takháqú—a fowl. |
| 11. I't—a dog. | 12. Tankúz—a hog. |

To each of these names the word *I'l* was added, which denotes "year." In Kashmir and Afghanistan, though this calendar is now obsolete, the memorial verses containing these twelve names, are still remembered. The present year is Tankúz. The verses are as follows :

سپچقان و اود پاری توشقان ولوی ئیل است
ایلان و یونت و قوی بود نام های سال
پچ ئیل پی تخاقوی ایت ئیل بعد ازان
تنگوز را حساب کن ای صاحب کمال

Note 2. The dates of this inscription also do not agree with those given by the native historians. The inscription places Haidar's first invasion in the year 935. Bírbar gives as the date 939, though he agrees with the inscription in the number of horse, 4000; Captain Newall gives the less probable amount of 14,000 cavalry. Hügel (following principally Abul Fazl) gives 930 (A. D. 1523) as the year of the invasion, and 10,000 as the size of the army. It is possible to reconcile these statements by assuming that the army of invasion consisted of 10,000 foot and 4,000 horse. The second invasion the inscription places in 974; Captain Newall (who does not seem to recognise the invader as the Mirza Haidar of the former invasion from the north) gives its date as 947, which is in general agreement with the above-mentioned Pandit, and with Hügel, both of whom give 948 (1541); the latter, however, speaks of "a considerable force." The statement of the inscription must probably be understood to mean that he set out from Lahor with 450 horse; he probably gathered an army of adventurers and malcontents as he proceeded. The confusion is very great in that part of the histories of Kashmir, which relates to the decade of Haidar's *rule*,—it does not seem to have been *reign*—principally because he who was at one time Haidar's nominal sovereign, was soon afterwards his nominal opponent. The name of this individual, evidently a puppet, so common in all Asiatic histories, was doubtless تاریک but whether this should be read *Tárik* Sháh, as Bírbar reads, or *Názik* Sháh, as Hügel reads, appears uncertain; Captain Newall gives the name *Tarkh* Shah, which is undoubtedly wrong. In this period also falls the first recorded attempt on the part of the Moghul emperors to take possession of the valley. For Haidar, much harassed by the rising Chak family, offered the sovereignty of the country to Humáyún, when it was really no longer in his power to offer it. The Mirza's embassy found Humáyún encamped at Atok, on his return from Persia to Hindustan. Humáyún set out immediately for Kashmir; but the expedition failed, as the army mutinied at or near Mozufferabad. Haidar's death the inscription places in 987, Bírbar in 959. The latter relates that during his war with Tárik Shah, Haidar went alone into the fort of Avantipúr; a butcher asked him who he was; he could not reply in Kashmiri, whereupon the butcher killed him with the axe which he happened to have in his hand. Newall says that his death took place (in 1551

A. D.) as he had issued from the fort of Indrakoul to reconnoitre the enemy's position.

Note 3. A question remains whether Moorcroft had this inscription cut, as appears most probable, and if so, why. The reply has been suggested that he did it in order to put on record the feasibility of an invasion of Kashmir by *cavalry* from the north as well as from the south. It is not unworthy of remark that many a tourist, misled by the name of William Moorcroft upon the tombstone, has stated, in print and out of it, that Srinagar contains the grave of the enterprising traveller.

III. Inscriptions on and near the Great Mosque:

Opposite the principal entrance of the Jami Masjid, a building most remarkable for its numerous tall cedar pillars, there is a *bauli* with the following inscription:

بر آمد چشمه فیض الهی	بحسن سعی مشکفی خاکساران
بتوفیق خدا این کار محمود	گرفت انجام و مشکل گشت آسان
خلوص نیت و صدق ارادت	شده صرف بنایش از دل و جان
پی دنیا و دین این آب رو بس	که شوید روی خود زو هر مسلمان
ازین چشمه بانی چشم دارد	که یابد شست و شو طومار عصیان
گناه خلق گردد شسته زین آب	که باشد مبعثش دریای عرفان
بود وجه کرایه از دگا کین	پی ترمیم حوض فیض جریان
خدا یا بانش را از تفضل	بدست خود بده تشریف ایمان
که دارد ورد خود این بیت اوستاد	ز روی التجا با چشم گریان
چونام در ازل محمود کردی	الهی عاقبت محمود گردان
بدریای تفکر رفته ا گه	پی تاریخ این فرخنده بنیان
خضر گفتا که جاری فیض ماباد	همین تاریخ بنویس ای سخن دان

الهم اغفر لبانیة ولوالدة یا غفار سنة ۱۰۵۲

Translation.

The fountain of God's favour came forth through the laudable efforts of a handful of humble men.

By the grace of God Mahmúd began this work, and the difficult became easy.

The fund for its construction was purity of intention and sincerity of aim, with earnest hearts.

Of worldly and religious glory this is enough that every Musulman may wash his face in it.

From this fountain he (the builder) looks for that in which the record of transgression finds cleansing.

People's sin is washed away by this water whose source is the sea of knowledge.

Let the amount of the rent of the shops be for the repairs of the tank flowing with blessing.

Oh God, with thine own hand give graciously to its builder the ennobling faith.

For this, the teacher's verse, has its own task ; he takes refuge with weeping eye (and says) :

As thou at the beginning hast given me the name of Mahmúd, oh God, make it Mahmúd in the goal !

Into the sea of thought the Intelligent Man (*i. e.* the composer of the inscription) went for the date of this auspicious building.

Khizt said, Let my favour flow on ; write this date, oh poet :

Oh God, pardon its builder and his father,--Oh Pardoner!--1056.

At the entrance of the Great Mosque itself, there is the following decree of the Emperor Sháh Jehán :

شاه جهان بادشاه غازي

نقل فرمان سعادت نشان حضرت سليمان مگاني صاحب قران ثاني
كه بتاريخ هفتم اسفندارمذ ماه الهي حسب الالتماس كمترين خانزادان
احسن الله الخطاب بظفر خان درباب برطرف نمودن بدعت هائيكه در زمان
صوبه داران سابق درلده دليذير کشمير شده بود و باعث خرابي رعايا و سکنه
اين ديار بود شرف ورود يافته .

فرمان

چون همگي همت والانهمت مصروف ومعطوف بر رفاهيت خلق است بنابرین
بعضی امور که در خطه دليذير کشمير باعث آزار سکنه انديار مي شد حکم
فرموديم که برطرف باشند از جمله آنمقدمات يکی آنست که وقت چیدن
زعفران مردم را به عنف ميبردند که زعفران بچينند و قليلي نمک بعلت اجوره
آن بانمردم ميدادند و ازین جهت بانجماع آزار بسيار ميرسد حکم فرموديم
که تکليف چیدن زعفران اصلاً بکسی نکنند و آنچه تعلق بخالصه شريفه داشته
باشد مزدوران را راضي ساخته اجوره واقعی بدهند و آنچه تعلق بجاگيردار

داشته باشد کل زعفران بچنس حواله جاگیر دار نمایند تا بهر طریقی که خواهند بچینند مقدمه دیگر آنست که در زمان بعضی از صاحب صوبه های کشمیر بر سر خوارشالی دودام بعلت هیزم میگرفته اند در عمل اعتقاد خان چهار دام بان علت بر سر خواروی گرفته میشد چون از بجهت ازار بسیار نیز برعایا میرسید بنابرین حکم فرمودیم که بالکل رعایا را از طلب این وجه صعاف دارند و بعلت هیزم هیچ چیز نگیرند مقدمه دیگر آنست که دهی که جمع آن زیاده از چهار صد خوارشالی بوده باشد ازان دیه دو گوسفند حکام انجا هر ساله میگرفته اند و اعتقاد خان در ایام صاحب صوبگی خود بجای گوسفند بر سر هر گوسفند شصت وشش دام میگرفته چون ازین جهت نیز برعایا ازار تمام میرسید بالکلیه حکم فرمودیم که بر طرف باشد نه گوسفند بگیرند و نه نقد باین علت رعایا را از گرفتن آن معاف دارند دیگر اعتقاد خان در ایام صاحب صوبگی خود سوا سری نموده بر سر هر ملاحی خواص جوان و خواص پیر خواص خورد سال هفتاد و پنج دام میگرفت و معمول قدیم آن بوده که بر سر جوانی شصت دام بر سر پیری دوازده دام بر سر خورد سالی سی وشش دام میگرفته اند حکم فرمودیم که دستور سابق را معمول داشته بدعتیکه اعتقاد خان کرده بر طرف دانند بمقتضای آن عمل نکنند مقدمه دیگر آنست که صاحب صوبه ها در وقت میوه در هر باغ و در هر باغچه که میوه خوبی که گمان داشته اند کسان خود را تعیین می نموده اند که آن میوه را بجهت آنها محافظت نمایند و نمیکذاشته اند که صاحبان آن باغ ها و باغچه ها آن میوه را متصرف شوند ازین جهت ازار بسیاری بانجماعه میرسید چنانچه از آن مردم درختهای میوه را دور ساخته اند حکم فرمودیم که هیچ صاحب صوبه قرق میوه باغ و باغچه کسی نکند می باید که حکام کرام و دیوانیان کفایت فرجام و اعمال حال و استقبال صوبه کشمیر این احکام جهان مطاع را مستمر و ابدي دانند تغیر و تبدیل بقواعد آن راه ندهند هر کسکه که تغیر و تبدیل را راه دهد بلعنث خدا و بغضب پادشاهی گرفتار خواهد شد تحریر فی القاریع ۲۶ آذر ماه آلهی *

Translation.

GOD IS GREAT.

Sháhi Jahán the King, Defender of the Faith.

Copy of the auspicious order of his Majesty who occupies the place of Solomon, the Lord of the Conjunction, the Second, which was recorded on the 7th of Isfandármuz (February), according to Akbar's calendar, on account of the petition of the least of slaves (may God be gracious to him who is known by the name of Zafar Khan), with reference to the removal of the oppressions which were practised in the time of former Súbadárs in the beautiful city of Kashmir, and

were the cause of the ruin of the subjects and inhabitants of these regions.

Firmán.

Since all our exalted desire is turned and bent on the contentedness of the people, hence we gave the order for the repeal of some acts which in the beautiful country of Kashmir became a cause of distress to the inhabitants of the land. Of the number of those matters one is this that, at the time of collecting the saffron, men used to be impressed for this work without any wages except a little salt, and hence the people are suffering much distress. We ordered that no man should by any means be molested as to gathering the saffron; and as to saffron grown on crown-lands, the labourers must be satisfied and receive proper wages; and whatever grows on lands granted in *jágír*, let the whole saffron in kind be delivered to the *jágírdár* that he may gather it as he pleases. Another grievance is this that in the time of some of the *Súbadárs* of Kashmir they used to levy two *dám* for wood on each *Kharwár* (about 180 pounds) of rice, and during the government of *I'tiqád Khan* four *dám* for the same purpose were levied on each *Khárwár*. Since on this account also the people were much distressed, hence we ruled that the people should be entirely relieved of this tax, and nothing should be taken on account of wood. Another grievance is this, that a village whose rental was more than 400 *Kharwár* of rice, was obliged to furnish to the rulers of the place two sheep annually. *I'tiqád Khan*, during his rule, took 66 *dám* in the place of each sheep. Since on this account also the people were much annoyed, we gave a strict order that it should cease; neither should the sheep be taken nor money in their place; the people shall be held excused from paying this impost. Moreover, *I'tiqád Khan*, during his incumbency, levied a summary poll-tax of 75 *dám* on each boatman, whether a young, or an old man, or a boy, whilst it was the established custom formerly to levy 60 *dám* on a young man, 12 on an old man, and 36 on a boy. We ordered that the former custom should be re-established, that the oppression of *I'tiqád Khan* be stopped, and that people should not act in accordance with it. Another grievance is this that the *Subadárs*, in the fruit season, placed their own men in each garden, large and small, which appeared to contain good fruit, to watch the fruit for themselves and did not allow the owners of those gardens to use the fruit; hence much annoyance

was caused to these people, so that some of these men have destroyed the fruit trees. We ordered that no Subadār should lay an embargo on the fruit of the orchard or garden of any one. It is proper that noble governors and useful collectors and the tax-gatherers of this and future times in the province of Kashmir should consider these orders as lasting and eternal, nor should they admit any change or alteration in these regulations. Whoever admits any change or alteration, will fall under the curse of God, and the anger of the king. Written on the 26th Adar (March) according to Akbar's calendar.

On the Vegetation of the Jhelum District of the Punjab.—By
J. E. TIERNEY AITCHISON, M. D., F. R. C. S., F. L. S.,
Assistant Surgeon Bengal Army, &c., &c., &c.

To systematise a description of the vegetation, it will be as well to divide the district into several portions, giving a leading and particularised description of what may be considered the principal divisions, and then, comparing the other divisions with those already described, pointing out any characteristic features that may belong exclusively to that under our immediate notice.

For the ready comprehension of the several divisions or tracts, the accompanying diagrammatic map is attached, shewing the district to be divided into

The Jhelum Tract,
The Jelallipore Tract,
The Salt Plains,
Plains upon the Salt Range,
The Tract of the low ranges of Hills,
The Tract of Ravines,
Hills of the Salt Range,
Tract of Mount Tilla.

THE JHELUM TRACT.

The town of Jhelum, consisting of about 500 houses, is the head quarters of the Civil Station, and hence is looked upon as the chief town, although it is in truth but the fourth or fifth as regards number of inhabitants, trade, &c., in comparison with the other towns of this

district. It is situated in Lat. $32^{\circ} 56'$ N. Long. $73^{\circ} 47'$ E. (A. K. Johnston, 1855) and is about 671 feet above the sea level. It may be considered as occupying the centre of the Jhelum Tract. Nearly a mile to the west of this is situated the Military cantonment, once occupied by a large force of native troops, but since the mutiny, all but left to ruin.

The Jhelum Tract is the plain country enclosed within the Kharian and Ratian ranges of hills, with the Jhelum river running in the midst. It commences at the fort of Mungla, and ends some miles above Jelallpore, where the Kharian range and Surafur hills close in upon the river. It consists on the whole of a beautiful plain, which, near the bases of these hills, is cut up into ravines, but afterwards opens out into richly cultivated flat land. This, on the Jhelum side, is divided into three parts, by the wide sandy beds of the Kuhan (or Bukrala) and Boonah nullas.

The geological formation of this tract consists of—

1st. Recent tertiary, close to the river, which, in some places, as at Doolial and Cyngoe, is made up of a rich mould yielding profuse and good successive crops.

2nd. Pleistocene tertiary; this lies below the recent tertiary, but the latter disappears as we go inland, and the Pleistocene crops out upon the surface, containing beds of kunkur at the river, of some value, with a tolerable amount of surface soil.

3rd. As we approach the base of these ranges of hills, viz., the Ratian, &c., we enter upon a Miocene tertiary country, characterised by deep water-courses or ravines full of huge boulders, shingle and sand. From this the hills suddenly rise up, consisting of clay, marl, conglomerates, and sandstone, the last containing fossils similar to those found in the Sewalik range of hills, of which the geology of these hills is supposed to be the counterpart.

Water is obtained in this tract at little cost and labour, from wells about 20 feet deep, which yield a plentiful supply, fresh and sweet. A well is to be met with, attached to every village, and to many there are several, all worked with the Persian wheel. Their water is not used for irrigation, excepting for tobacco and small patches of cotton, but chiefly for gardens: the former of these crops indeed may be regarded as garden produce. Water is not raised from the river for irrigation. One stream of fresh water, the

Kuhan nulla, runs through this tract. Its water is not used for irrigation, but where this stream passes through the range of hills at Rhotas, its power is used to drive three or four flour mills. The remains of a canal of the old Seikh time are to be traced from near Doolial, in a direct line, to a little above the Civil Lines at Jhelum, across that portion of the country, where the river takes a rapid turn from a southerly to a westerly course.

AGRICULTURAL PRODUCE.

Two crops are generally produced during the year, viz., the Rubbee and Khureef. For the Rubbee crop the Zemindars begin to sow about the end of October; and collect the harvest during April. The Khureef crop is sown in June, and is collected about the end of September or during October. The hot weather extends from the middle of April to the middle of October; the cold weather over the rest of the year. The chief falls of rain occur about the end of August or during September. Heavy rains also fall in March and April. The crops generally throughout the Jhelum district are dependant for their maturity upon these special falls of rain.

The chief products of the Rubbee crop are, Wheat "*Gahun*," *Triticum aestivum*, var.; Barley, "*Jhow*," *Hordeum hexastichon*. Gram, "*Chunna*," *Cicer arietinum*; Rape, "*Surson*," *Brassica campestris* and *Eruca L.*; Linseed, "*Ulsee*," *Linum usitatissimum*; Safflower, "*Kusoomba*," *Carthamus tinctoria*; with a great variety of the Melon tribe.

Those of the Khureef crop are—

Millet, var. "*Bajree*," *Penicillaria spicata*. Millet, var. "*Jowar*," *Andropogon Sorghum*; Cotton, "*Kupas*," *Gossypium herbaceum*. Indian corn, "*Makee*," *Zea Mays*. Sugarcane, "*Gunnah*," *Saccharum officinarum*; Oil seed, "*Til*," *Sesamum Indicum*; Indian hemp, "*Sunn*," *Crotalaria juncea*.

Where irrigation may be resorted to throughout the year, tobacco and rape are raised during the whole hot season, as in the Goojerat district.

Wheat. Of this the bearded white variety is that which is chiefly grown, although the red is not uncommon; both are of average quality. A large exportation of this takes place; chiefly towards Mooltan.

Barley. The six rowed variety is produced of a very superior quality and is largely cultivated; the greatest part of this crop being also exported towards Mooltan.

Gram. This is cultivated, but in small patches in this tract—of a fine quality. The quantity, however, is not sufficient for local consumption, a large importation taking place from other parts of the district. Along with it we have the “Massoor,” *Eruum lens*, cultivated, either mixed with the former or separately.

A very small quantity of the pulses are cultivated in this tract, viz.

“Moth.” *Phaseolus aconitifolia*.

“Mung.” *Phaseolus mungo* (The split peas of which constitute the varieties of Dahl). Their quality is good, though the crop is scarcely sufficient for local consumption.

Bajree and Jowar, both excellent in their quality, are very largely cultivated, and together with barley and wheat may be considered the staple crops of the whole district. The Zemindar-class live chiefly on the Bajree and Jowar, consuming for their food little of either wheat or barley. Their cattle also are largely dependant for fodder upon the Boossa obtained from the crushed stalks and leaves of the two former, owing to the great want of pasturage in this tract. There are several kinds of Boossa for feeding cattle, viz., that most commonly in use, which is produced, as already stated, from the crushed leaves and stalks of the Bajree and Jowar; that made from the straw of wheat and barley; that made from the straw and leaves of the pulses and gram, which last is the highest in price and by the natives given chiefly to their horses, as also to cattle for fattening. Lastly, Boossa obtained from the leaves of the “Baer” the *Zizyphus vulgaris*.

Oil seeds. Of these we have—

“Surson.” The seeds of *Brassica campestris*, and *Eruca*, L. which by simple expression yield oil called commonly “Surson ka tel,” or “Thara meera ka tel.” *B. Eruca* yields a darker oil than *B. campestris* and hence, to distinguish this oil from that of the latter, it is often called “kala surson ka tel” or “kala surson.” The seed of the Til, *Sesamum Indicum*—also by simple expression, yields “Til ka tel” viz. Til oil.

The seed of the flax “Ulsee” yields “Ulsee ka tel” viz. Linseed oil. The plants of the above are cultivated, but not in sufficiency for the uses of the tract, and hence their products are largely imported.

Cotton is grown in tolerable quantities, but as a field crop, is very poor in quality. Where, however, it is grown as a garden crop and freely watered, some of the produce is exceedingly good, both as

regards quantity and the quality of the fibre. The fact is, that the soil in general is too poor and too dry, but if this be properly enriched with manure, freely watered, and under shade, a good crop is the usual result.

Tobacco. "Tumbakoo," *Nicotiana Tabacum*, is cultivated more as garden produce and undergoes free irrigation. There is not so much raised as is required for local use, but what is raised, is considered of a good quality.

Safflower. Of this a large quantity is cultivated, good in quality, and sufficient both for the local market and for exportation. The seeds are used, though not extensively, for making oil.

Indigo. *Indigofera tinctoria*—"Nil," is cultivated strictly for home consumption, and is used for dyeing the beard of the cultivator.

Rice. "Chaul," *Oryza sativa* has been cultivated in this tract, but very rarely. The fact is, there is no soil sufficiently moist and loamy for its cultivation.

Sugar-cane grows in this tract only as a garden product, not to have its juice extracted for the preparation of sugar, but to be sold in the bazar in the cane, and thus eaten by the natives. The cane is very poor, being small and exceedingly silicious.

"Sunn," *Crotalaria juncea* and "Sooja Para," *Hibiscus cannabinus*—are both grown in small patches and in stripes round fields, the first, however, more commonly. The fibres of both are good, and are manufactured into a coarse twine by the zemindar and thus sent to market. They do not seem to be cultivated for exportation.

GARDEN PRODUCE.

From gardens, which are attached to nearly every village, we have the markets well supplied with all the vegetables that are usually cultivated by natives, and which are used extensively by them in the form of "thurkarees." The principal vegetables are "Moolies," varieties of the radish—"Piaz," onions—"Baingons," egg-plant, *Solanum Melongena*; "Shalgum," varieties of the turnip—"Poluch," varieties of the spinach—"Gaager," varieties of carrot—"Shuker-kund," species of Arum—"Moukha," *Portulaca oleracea*—"Ram-turai," *Hibiscus longifolius*—besides an immense variety of the *Cucurbitaceæ* viz. "Kudoo," *Cucurbita Pepo*; "Keera," *Cucumis sativus*; "Khurbooza," *Cucumis Melo*; "Turbooza," *Cucurbita Citrullus*; "Kukree," *Cucumis utilissimus*, &c.

And used as condiments we have—

“Lal-mírch,” *Capsicum frutescens*; “Ajwain,” *Ptychotis Ajowain*; “Sonf,” *Fœniculum Panmorium*; “Aneeson,” *Pimpinella anisum*; *Cichorium intybus*; “Lusson,” *Allium sativum*.

The following may be considered as a rough sketch of the vegetation round a village of the district. Close to the village there are generally one or two small plots of garden ground, in the vicinity of the wells from which they are watered. These gardens are carefully surrounded by a strong and tolerably high fence of the branches of the “Keekur,” *Acacia Arabica*. Round the margin of these plots principally, and in close proximity to the wells, will be found trees of the “Keekúr” *Acacia Arabica*; “Baer,” *Zizyphus jujuba*; a few “Lessoora,” *Cordia Myxa*; an occasional “Burna,” *Crataeva religiosa*; sometimes a “Sissoo” *Dalbergia Sissoo*; and not unfrequently some fine specimens of the *Ficus Indica*, “Bore” and *F. religiosa*, “Pipul.” Then come plots of ground a little larger, enclosing tobacco, cotton and sugarcane, the last uncommon in this tract. These several plots are more or less watered from the wells, but with these exceptions no further irrigation of the crops in general is carried on.

The rest of the fields open out beyond with no divisions between them, except perhaps a footpath; wherever a hedge of any sort is met with, one may be certain of the close proximity of the dwellings of the natives or of places for housing cattle.

A few fruits, the produce of the district, are sold in the market. The chief of these are the mangoe, in a green and unripe state and of poor quality; the orange, sweet lime, and citron, all excellent; also, during nearly the whole year, the plantain. In the gardens of Europeans, however, we have a large number of English vegetables cultivated, with such fruits as the grape, fig, guava, apricot, peach and strawberry, all good of their kind.

TREES.

Most of the trees in the Jhelum tract have been introduced, though many have become naturalised; few indeed can be said to be native to it. We will therefore in writing of them, class them under two heads.

1st. Trees which have been introduced.

2nd. Trees which are native to the district.

1st.—Of trees that have been introduced we have—

Cordia Myxa, “Budda-lessoorā.” The large-fruited Lessoorā. This yields the large kind of Sebesten. It is a handsome showy evergreen tree, with good-sized timber, but is only found in gardens.

Cordia latifolia, “Lessoorā.” This tree yields the small Sebesten, which is scarcely used. It is found in most of the gardens in the district. It has small timber, which is not put to any use in particular.

Syzigium Jambolanum, “Goulab Jaman.” Of this there are a few fine trees, generally near the dwellings of Fakirs. There is one tree on the summit of Mt. Tilla, fifteen feet in circumference.

Parkinsonia aculeata, “Velaiti Kekur.”

Sesbania Egyptiaca, Pers.

These two latter exist as tree-shrubs: both are true garden plants and are extending their range; both being now occasionally met with near villages.

Bauhinia variegata, “Kochnar.” A garden tree, the flower buds of which are used largely in curries and pickles.

Morus alba and *Morus laevigata*, Wall. “Toot,” are in this tract dwarfed from want of soil and moisture, and do not yield timber.

Melia Azedarach, L. “Buchyan,” Persian Lilac is attached to all villages. The timber is of no use: the foliage gives a good shade and the ripe fruit is greedily seized upon by goats and sheep.

Moringa pterygosperma, “Sohounja,” or horse-radish tree, in this tract is a garden product; its fruit is not used for oil making, nor is its timber applied to any purpose. It affords, however, a good shade.

Populus Euphratica and *P. dilatata*, Don. “Safaida” are both the products of the gardens of Europeans.

Acacia Serissa, Roxb. “Seriss,” grows to a very handsome tree, generally near European dwellings.

Cedrela Toona, “Toon,” has been introduced but lately. It both flowers and fruits.

Bombax heptaphyllum, L., “Sembul.”

Cassia fistula, L. “Amultas,” the Indian Laburnum grows near dwellings, not common; produces good fruit and flowers generally twice during the year.

Salix Babylonica, frequently met with near bunees, tanks, and damp localities.

Ficus religiosa, "Pipul," and *F. Indica*, "Bore, Burgot," Banyan tree. Fine specimens of these are found throughout the district. It is a matter of opinion as to whether their origin here be due to natural causes or to their having been introduced. If the former, they must be upon the confines of their northern limits.

2nd.—Trees native to the district.

Cratæva religiosa, "Burna." This seems to have been at one time a common tree in this tract, more especially upon the alluvial soil near the river, where there are still a number of very large trees which give a splendid shade and form large timber. The fruit is used to mix with mortar for making a strong cement.

Tamarix Indica, Gallica, L. "Furas." In this tract the only trees we have of this, have been planted, but in some other tracts we find it is prolific. It produces a miserably poor brittle wood, used chiefly for the fire. This tree resembles a fir and indeed by most people it is generally mistaken for such.

Acacia Arabica, "Kekur, Babool." Of this we have two varieties, viz.: *A. A. var. spina, albida*, and *A. A. var. cypress*. This latter is the most elegant but the least common in this tract. They are both large handsome trees yielding good shade, give excellent, useful timber, and grow rapidly and well, over the whole district. Their wood is used largely for ploughs, well wheels and tent pegs; their branches for feeding sheep, goats, camels and cattle in general, as also for making hedges. The bark is used for tanning and making country spirits, besides yielding not unfrequently a large supply of gum, "Gondh."

Acacia modesta, Wall "Phulai." In good alluvial soil and where there is drainage this becomes a fine timber tree. Otherwise, as where it grows on the hills and ravines of the district, it is but a poor twisted, stunted shrub, fit only for firewood, but for this purpose it is excellent; camels, goats, &c. feed in Spring on its young leaves and flowers. Its timber is very hard and used greatly for wheels, especially when these are to be exposed to wetting. The heart wood becomes quite black and is as hard as iron.

Dalbergia Sissoo, "Sheshum." Of this, which produces the most valuable timber, we have but little, and what trees there are, have apparently been planted during the rule of the English Government in

the Punjaub. A few trees, however, of Seikh times still exist near wells, and shew splendid timber. The natives of the district would induce one to believe that this had formerly been a common tree and that during the Punjaub campaign it had been cut down. I believe it has been introduced since our conquest of the country, with the exception of the specimens near Tullagung.

Zizyphus jujuba, "Baer," is a good, rapid growing tree, produces excellent wood, highly valued by the zemindars, and requires no care or trouble to rear; its fruit and leaves yield good fodder to goats, sheep, &c. and its branches make excellent hedges.

The "Baer" and the "Kekur" are the staple woods of the whole district, from which all the woodwork required by the agricultural population is made. They spring up naturally from their seeds, whether distributed by winds, men or animals. They require no care in their youth, and both grow freely without water, (or at least under very straitened circumstances for it,) so long as they have some soil to grow in. On stony, sandy land they do not grow, but on clay they spring up readily. At present there are few or no old trees in the Jhelum tract and decidedly not many in any of the other tracts; that is to say, trees fit for timber. This is due solely to carelessness and negligence on the part of the zemindars to substitute young trees for those cut down; hence there is at present a scarcity of timber, which in a few years, if the present state of things goes on, will end in a nullity of local produce. It appears to me that Government should take up this subject in earnest, and only permit trees of above a certain age to be cut down, making it an established rule, that for every tree cut down, a proportionate number of young trees be planted. The greater the age of the tree cut down, the larger should be the number of young trees required to be substituted for that one removed: and thus, instead of a scarcity of timber, in a few years, a cheap supply of wood grown on the locality would be the result, besides the benefit that would otherwise accrue to a country at present all but destitute of trees. In replacing trees cut down, it is strongly to be recommended that the Baer and Kekur be preferred to any others: not even excepting the Sissoo, which, although a valuable timber tree, takes too long a time to become useful and is too tender, requiring too much nursing in its youth, to be of real paying benefit. The rapid growth of the Baer and Kekur and their non-liability to injury

from want of care, besides their great durability, more especially during exposure to heat and moisture, are characters which render them of immense value to the zemindar, who uses their wood for ploughs and well-wheels where it is continuously exposed to the extremes of moisture and dry heat; besides which, he gets a quick return for the labour and trouble expended in rearing the trees, which are grown on the spot where their wood is required for consumption. Thus he is put to no expense for carriage, while the branches of both trees are of great value to him for fences for his fields, and the leaves, blossom and fruit as fodder for his cattle.

CHARACTERISTIC PLANTS.

The characteristic plants of the Jhelum tract may be classed as those met with—

- 1st. On the Islands and banks of the river,
- 2nd. On the moist marshy soil left by the receding of the river,
- 3rd. In wells,
- 4th. As weeds in gardens,
- 5th. As weeds in fields.

6th. The remainder are met with on roads, waysides, fields and gardens, in short are not confined to any particular locality.

1st. The characteristic plants met with on the islands and banks of the river Jhelum are :--

Tamarix dioica, Roxb. Called in the vernacular generally "Pilchee," "Jhao," and frequently "Furas" (the latter name, however, is more generally applied to the tree *T. Indica*). This with *Saccharum spontaneum* covers the islands (balaa's) during the hot weather, with a dense low jungle. Both are considered of some value for thatching; the former is also used largely for all kinds of rough basket work. From the great abundance of both, and their cheapness, they are used to consolidate the soil laid upon the Grand Trunk Road. By the end of October, the islands are cleared completely of this jungle, and nothing but the roots and stumps of the plants are left, which begin again to send up fresh shoots in March and April. The fresh shoots of the latter are at this time fed on by cattle. Cattle will not, however, feed on the full grown grass, which is too coarse and rough for them. On some of the Balaa's, but chiefly on the banks of the river on the Goojerat side, the *Saccharum Munja* "Moonj," is to be met with in large quantities, forming a much higher and thicker

jungle than that of the *S. spontaneum*. Its value is much greater, being used for rope-making. The cause of its high price is, that ropes made from it are able to withstand the effects of moisture combined with strain, much longer than any other rope made from materials as readily obtained. It is largely used by boatmen on the river, as well as for the anchorage of the boats that form the bridges on most of the Punjaub rivers. In 1861, the Moonj harvest was a failure, and in its place large quantities of the leaves of the *Chamærops Ritchiana*, "Puttha" from the Attock district, were imported to the rest of the Punjaub to supply the bridges with moorage rope. The ropes are made by steeping the leaves in water for a certain number of days, then tearing them into ribbon-like strips, which are plaited together upon the principle of the watchguard plait, and then two or three of the plaits are twisted into one rope of the required thickness. The Moonj is said to bear a heavier strain and last longer than the other, when both are exposed to moisture.

The *Anatherum muricatum* "Khus Khus," is met with in some quantity, chiefly on the river's bank, both cultivated and in a wild state, near Russool; also a few miles above Jelallpore. It is of value to the zemindars who sell it for being made into tatties, &c.

2nd. The characteristic plants met with in moist marshy ground left by the receding of the river, &c., are:—

Machlys hemisphærica, D. C.

Mazus rugosus, Lour.

Mimulus gracilis, R. Br.

Veronica anagallis, L.

Polygonum Persicaria, L.

Rumex acutus, Roxb.

Potentilla supina.

Zeuxine sulcata. The only orchid obtained in the whole district and this only on the banks of the remains of an old canal below the Government garden at Jhelum.

Alisma Plantago, L. This flowers early in April, and its presence in this part of the Jhelum district, seems to be due to the river bringing down the seeds from a higher elevation; these vegetate in the pools of water left by the receding of the river. The seeds of the Singhara, *Trapa bispinosa* are also brought down by the river floods in large quantities, but I have never seen them vegetate.

Potamogeton crispus, L.

Juncus bufonius, L.

Eleocharis palustris.

Isolepes barbata, R. Br.

Scirpus maritimus.

Cyperus rotundus, L.

Cyperus niveus.

Cyperus haspan.

Ranunculus sceleratus, L.

3rd. In the wells of the district we meet with—

Adiantum capillus-Veneris.

4th. As weeds of gardens. Garden weeds are in much greater variety than one would at first be apt to suppose. This is simply due to the presence of a moister and richer soil than that of the surrounding country.

Fumaria parviflora.

Malcolmia Africana, R. Br.

Sisymbrium Sophia, L.

Sisymbrium Irio, L.

Capsella bursa-pastoris, R. Br.

Lepidium sativum, L. ?

Goldbachia lævigata, D. C.

Oligomeris glaucescens, Camb.

Viola tricolor, Cult. ?

Silene conica.

Silene rubella, L.

Arenaria serpyllifolia, L.

Portulaca oleracea.

Medicago denticulata.

Trigonella incisa.

Indigofera Senegalensis, D. C.

Vicia sativa, L. and other species.

Centaurea cyanus, L.

Anchusa hispida, Forsk.

Nonnea Pulla, D. C.

Antirrhinum crontium, L.

Veronica agrestis, L.

5th. The characteristic plants met with as weeds in fields.

Early in March *Oxalis corniculata*, *Anagallis arvensis*, *Lathyrus aphaca*, L., and *Asphodelus fistulosus* are seen springing up in immense quantities over the whole of the fields, along with the spring crops. The former are not very injurious, and hence are not weeded out, but the last if allowed to proceed in its growth would undoubtedly choke, at all events, wheat and barley. In some fields that have been sown late and in which none of the corn crop is as yet up, the *Asphodelus* at a very little distance may be easily mistaken for the corn crop. This therefore, when it is large enough to be grasped by the fingers, is carefully weeded out from the cultivated ground.

Sesbania aculeata is very common throughout the fields, and during the months of August and September, it may be seen overtopping the Bajree or other autumnal crops.

Celosia argentea, L. grows amongst the Bajree and Jowar, and is found as a weed from a few inches in height to a shrub of fully seven feet, covered with a profusion of lovely pink flowers. The natives, upon cutting down the crop, curiously enough always seem to leave the plants of this, which remain conspicuous over the reaped fields.

Baliospermum polyandrum. This seems to be one of the most difficult shrubs to eradicate, from the large quantity of seeds that one plant bears, and its readiness to germinate. It is not very noticeable until the autumnal crop is cut. Immediately after this, the plant rapidly produces a dark green foliage with flower and fruit, assuming the characteristics of a shrub. It occupies a belt of land half way between the Jhelum and the Ratian range of hills, from which it does not seem to deviate.

6th. Characteristic plants, met with on roads, &c., &c., &c.

Calotropis procera, R. Br., "Ak Madar." This is to be found in every part of the district, from the sandy wastes to the most cultivated soil, from the plains of the Jhelum to the heights of the salt range and Mt. Tilla. It is a rank weed, but being easily eradicated, does not give the cultivator much trouble, except on the edges of the fields, where carelessness permits of its growth.

Adhatoda vasica, Nees, "Bansa and Bakoor." This also is a disagreeable neighbour to cultivation, but is easily kept at a proper distance. It is to be found at an altitude of from 700 to 3,200 ft. and on the Ratian range of hills forms a belt of vegetation pecu-

liar to the boulders that form a portion of that range. In the ravine country it grows as a large spreading bush.

Peganum Harmala, "Hurmool," forms a thick dense bush about a foot in height and although met with on the low ranges of hills, &c., it is not so flourishing as in the plains, round the edges of fields and on roadsides.

Triflosia purpurea, Pers. covers the plain country wherever it is allowed to grow, and exists as a rank weed especially where there is no vegetation of higher growth than itself: it is easily choked, but where grass like the Doob and similar creeping plants, with *Pimpinella crinita*, Boiss. and *Trichogyne cauliflora*, D. C. cover the soil, as on the parade ground, the plant quickly spreads itself in great luxuriance.

Tribulus terrestris, is met with, creeping close to the ground in great quantity over the whole district, with *Malva parviflora*, L.

Centaurea calcitrapa, L.

Microhynchus nudicaulis.

Boerhaavia diffusa, L.

Convolvulus arvensis, L.

Convolvulus pluricaulis, Choisy.

Heliotropium undulatum, Vahl.

Heliotropium Europæum, L.

Solanum Jacquini Willd "Kuthelee Kunth."

Withania semnifera, Dun.

Chenopodium album, L.

Crozophora tinctoria, Juss.

Lathyrus aphaca, L.

Alysicarpus nummularifolius, D. C.

Alhagi maurorum.

Nomismia aurea, W. & A.

Xanthium strumana, L.

Artemisia scoparia, W. & K.

Echinops echinatus, Roxb.

Ipomœa sessiliflora, Roth.

Trichodesma Indica, R. Br.

Solanum nigrum, L.

Giesekia linearifolia, Moq.

Euphorbia dracunculoides, Lam.

Viola cinerea, Boiss.

Polycarpæa corymbosa, Lam.

HERBAGE FOR CATTLE.

Of grass especially cultivated or allowed to grow for the purposes of pasturage, there is none in the Jhelum tract, for all land capable of producing grass is at once placed under some kind of corn crop. All kinds of cattle are chiefly sent to feed upon the low hill ranges, or upon certain tracts of land covered with the Baer, (from a low thorny shrub to a tree of good size, *Ziziphus nummularia*, Mulla, and *Z. jujuba*) the cattle feeding on the leaves and fruit. Of such Baer jungles there are several in the Jhelum tract, made up chiefly of the Baer, but also partly of the "Kureel" and "Bakoor," with an occasional "Kekur" and perhaps rarely a few bushes of the *Grewia betulifolia*. Camels manage to pick up their fodder, (which must necessarily chiefly consist of the *Saccharum spontaneum*,) from the islands on the river. This, however, except in a young state, seems to be too hard a grass for cattle generally. Green corn is even cut for horse fodder, and should a cavalry regiment be stationed at Jhelum, the grass-cutters of the regiment have to go down the river as far as Russool, (which is situated fifteen miles further down, on the opposite bank of the river,) for the purpose of obtaining grass.

The grass-cutters of the usual inhabitants get what grass they can along the roadsides, between the edges of fields, or footpaths, &c. and that which is chiefly collected is the Doob, *Cynodon Dactylon*, Pers.

Pennisetum cinchroides.

Aristida depressa, Retz.

Digitaria sanguinalis.

Panicum Petiverii, Trin.

Panicum procumbens, Nees.

Panicum antidotale, Retz.

Aristida murina, Cav.

Lappago biflora.

Eragrostis Poæoides, Beauv.

Dactyloctenium Aegyptiacum.

Koeleria phleoides, Pers. This may be called the cold weather grass, as it flowers as early as February, and if cultivated, might be of great use as fodder during the cold weather months.

Many other grasses are met with, but the above are the only kinds found generally in the tract. The others in damp and shaded localities, exist rather as botanic specimens than as herbage for cattle.

7th. Of Parasitical plants, the only one met with as yet, has been *Cuscuta reflexa*, "Akas-bel," which is in this tract supported by the "Baer," on Mt. Tilla by the "Bakoor," and at Choya-siden-sha by the "Angeer." (*Ficus caricoides*, Rox.)

THE TRACT OF THE LOW HILL RANGES.

Under this head are included the Bukrala, Ratian, Surafur and Kharian ranges of hills. Their geology, physical characteristics and vegetation are similar, and their average height may be considered to be from 1,000 to 1,200 feet above the sea level. Mori Peak, the highest of the Kharian range, is 1,400 feet, and is situated in the centre of that range. Mt. Tilla the most westerly of the Ratian range, is 3,200 feet. The botany of the latter, will, however, be considered by itself hereafter.

These hills are more or less covered with a jungle of low trees and shrubs, besides a few grasses and other herbs. On the whole, however, they present a barren aspect, being covered with a dried-up clay and stony soil, lying chiefly upon sandstone, but here and there upon boulders, and broken up extensively by deep ravines with sandy bottoms. However, in some little solitary shaded nooks, where loamy soil has accumulated, and where there is moisture from some spring, we come upon a herbage of a luxuriance only to be met with in a tropical climate.

The vegetation upon these hills affords pasturage for immense flocks of goats and sheep chiefly, but also of many camels and cattle, which feed upon the blossoms and tender shoots of the shrubs rather than upon the grass, the latter being very scarce in proportion to the former.

This jungle, besides yielding fodder for the cattle, supplies the main part of the firewood for the surrounding population.

The chief sources of firewood in the Jhelum tract, are—

1st. Wood obtained from the river Jhelum by women wading into its shallows, and picking up the wood that has been brought down from the hills, but which is so dense with the amount of water that it contains, that it sinks to the bottom. The women

wade out in large numbers at a time, and feeling with their toes for the bits of wood, pick them up and raise them with their toes. The wood is then placed in baskets and afterwards dried in the sun. This is the cheapest kind of firewood.

2nd. The large roots of trees chiefly of the "Cheer," *Pinus longifolia*, carried down with the floods of the river, but not soaked with water.

3rd. That obtained from the jungles on the low ranges of hills.

The jungle of the low ranges of hills is made up of—

Stunted shrubs of the *Acacia modesta*, Wall. "Phulai." *Capparis aphylla*, "Kureel." *Carissa diffusa*, Roxb. "Karounda." *Sageretia Brandrethiana*,* "Kohare." *Gymnosporia spinosa*, "Putaker." *Ehretia aspera*, "Chunroor" and "Kookhun."

Grewia betulifolia.

Cocculus leæba.

Periploca aphylla.

Asparagus, several species.

Taverniera nummularia, D. C.

Dodonæa Burmanniana.

These constitute the main part of it, but in some portions it may be made up of the *Zizyphus jujuba* and *Acacia Arabica*, both very stunted, with *Adhatoda vasica*, Nees, and the "Dhak," *Butea frondosa*, the last chiefly in broken ground, where also we meet with *Tecoma undulata*, "Loora." On the higher localities on the ridges of Mt. Tilla, we may pick up shrubs of *Olea Europea*, Cow.

The under-shrubs and herbs growing with the above jungle are ;

Salvia pumila, Benth. which in many places covers the ground like a grass and is much sought after by sheep.

Boucerosia aucheri, "Choonya," a very characteristic plant, springing up from the roots and among the stems of the larger shrubs. The natives collect it and use it largely as a bitter tonic.

Solanum gracilipes, Jacq.

Linaria ramosissima, Wall.

Commelyna communis, L.

Commelyna Bengalensis, L.

Polygala arvensis, Willd.

* *Sageretia Brandrethiana*, called after Arthur Brandreth, Esq., Bengal Civil Service.

Polygala Vahlana, D. C.

Astragalus multiceps, Wall.

Pupalea lappacea, D. C.

Dipteracanthus prostratus, Nees.

Ærta javanica, Juss.

Ballota limbata, Benth.

Allium rubellum, Bieb.

Cleome linearis, Stocks.

Abutilon Indicum.

Sida rhombifolia, L.

Triumfetta angulata, Lam.

Besides the above, we have several grasses:—

Cynodon dactylon, “Doob.”

Melanocenchris Royleana, Nees.

Pennisetum Cinchroides.

Aristida depressa, Retz.

Eragrostis Cynosuroides.

Dactyloctenium Aegyptiacum.

In some ravines *Saccharum Munja* and *S. spontaneum* and not uncommonly also *Nerium odorum* are to be met with. The last plant is, however, more common where these ravines open out into the nullahs. It is not to be found on the banks of the river, in its whole course from the fort of Mungla to Shapore, but seems to prefer the hills, as no sooner does one get into the hilly country above Mungla, than it is met with in large quantities on the river bank.

Except during the rainy season, water is not obtainable in these low ranges of hills, unless it be from Bunnees, which are reservoirs of water formed more or less artificially in connection with springs. To these all the cattle are brought from miles round, as the Bunnees are few in number and generally at some distance from each other. The inhabitants of this tract always use their water in preference to any other. In nearly all these Bunnees we have a form of aquatic vegetation peculiar to them. In those of some depth we have *Nelumbium speciosum*, the fruit of which is greatly relished by the natives. In most of them, we have *Nymphaea cœrulea*, *alba*? and *pubescens*, with *Polygonum barbatum*, L. and *Persicaria*, besides—

Sagittaria cordifolia, Roxb.

Marsilea quadrifolia.

Potamogeton crispus, L.

Juncus bufonius, L.

Celsia Coromandeliana, Vahl.

Rumex acutus.

In their vicinity, the vegetation is usually of much greater luxuriance than that of the surrounding country.

TRACT OF RAVINES.

This constitutes that portion of the country between the Ratian and Bukrala ranges; as also that to the north of the Bukrala and Salt ranges. It consists of plain ground broken here and there by low elevations, and cut up in every direction by ravines. The average altitude of these plains about Chuckowal and Tullagung is 1000 feet above the sea level. Their geological formation is chiefly tertiary miocene, with little or no surface soil. The vegetation is much poorer than that met with in the Jhelum tract. The agricultural products are chiefly Bajree and Jowar, which are usually very fine, bearing heavy crops if there has been a good rainy season. Wheat is poor, and cotton also, except where cultivated in the courses of the *nullahs* or ravines in which alluvium has been deposited: the small garden plots, for they appear little or nothing more, are then watered from wells sunk at a little distance from the bank of the nullah: this kind of cultivation is well illustrated, at Doomun; where seven or eight wells, with their garden plots of cotton and tobacco are seen, on the margin of the nullah at the base of the fortress. Except near wells or bunnees or tanks, trees other than the Baer and Kekur are scarcely to be met with, and these are uncommon. From Chuckowal westwards, large and fine crops of gram, *Cicer arietinum*, with varieties of *Phaseolus* are raised, this country supplying much of the gram to the rest of the Punjab.

To the west of Chuckowal the land spreads out into much more extensive plains, and is much less cut up by small ravines than that to the east of it, although traversed by many large nullahs, upon the banks of which good fodder is obtainable, and where we find the *Dalbergia Sissoo*, Sheshum, growing in its natural soil and producing timber by no means to be despised: especially near Tullagung.

Herbage is not procurable for cattle except on the low ranges of hills, and in the ravines that run through this tract, or on the banks

of the nullahs already spoken of, where *Saccharum spontaneum* is frequently to be found growing in great luxuriance, vying with *Nerium odorum*.

During the hot weather the cattle of the zemindars suffer greatly from the want of good water, and their owners have recourse to building mud tanks for collecting water during the rains: to these, as Flemming says, "Men and animals go for drink indiscriminately." Tanks not fed by springs have, apparently for this reason, no vegetation in them, unless it be species of *Pistia*.

The uncultivated land of this tract has a vegetation very similar to that described as existing upon the low range of hills; with this exception, that in the ravines and beds of nullahs, we meet with the "Dhak" *Butea frondosa*, in much greater quantity, in some spots even constituting a jungle, as at Booroo jungle on the Bukrala nullah.

The piece of land, however, on which this jungle grew, has been to a great extent, reclaimed. Near Tullagung are hedges of the *Cactus Indica* growing in great luxuriance.

The *Colocynth*, *Cucumis Colocynthis*, "Indraun," covers the hard sun-baked ground throughout the whole of the hot weather: *Limeum Indicum* is very common.

THE JELALLPORE TRACT

Constitutes that portion of the district that lies between the river Jhelum and the Salt range, from where the Surafur hills come down upon the river, to the town of Pind-dadun-Khan. This tract consists of an extensive plain, spreading from the base of the salt hills to the river, with but a very slight incline towards the latter. The plain consists of a rich alluvial deposit, except at the base of the hills, where it is made up of a mass of boulders, shingle and debris. Interspersed throughout it are tracts of soil impregnated largely with saline matters: the last increasing in amount as we approach Pind-dadun-Khan. In some places torrents from a higher level than that of the salt, deposit loam upon certain lands close under the salt range, making them the richest in the whole district. To facilitate the deposition of the loam, as well as to prevent its being carried off by rains after its deposit, ridges of earth of about eighteen inches in height are thrown up round the fields.

Over this tract wells are very plentiful, with a large supply of water

at a little depth, but the water except in close proximity to the river is saline, and decidedly more so the further west we go.

Where the well water is not greatly charged with saline matter, it is largely used for irrigation, and where the river presents a high bank its water is also raised for the same purpose. At Baghanwalla a small stream from the hills is nearly used up for irrigation.

The chief crops irrigated are,—sugar-cane, rape and cotton.

The crops are the same as those in the Jhelum tract, but the cotton on the whole, is very much finer and the produce much greater.

Sugar-cane is cultivated as a field product and is of fine quality.

Rape “Surson.” Of this, large quantities are cultivated and exported, as also of Til, *Sesamum Indicum*.

Rice is occasionally raised on the islands on the river and on land that is frequently flooded.

Indigo is occasionally grown and brought into the market.

Of Trees, the “Kekur,” and in greater numbers, its variety the cypress, grow in much greater luxuriance than elsewhere, as also do the “Bore” and Pipul, *Ficus Indica* and *F. religiosa*. In this tract we meet for the first time with *Salvadora oleoides*, “Pelu.” It is confined, however, in the most easterly part of this tract, to the immediate base of the hills.

Also close to the base of the Hills, growing in its natural state, as well as introduced into some of the fields near Jelallpore, we have *Moringa pterygosperma*, Sohounja.

The barren soil alluded to as occurring amidst the cultivated land, is covered with a low, shrubby jungle consisting of *Caroxylon fatidum*, Moq, *Anabasis multiflora*, Moq, *Sueda fruticosa*, L., the first of which chiefly alone, but not unfrequently with the two latter, is largely burnt to yield Sugce-muttee, a coarse carbonate of soda and potash. In this tract, however, but little is made in proportion to that produced in the tract we shall next speak of, or that of the district of Shapore. Except near the river's bank we have scarcely any of the grasses met with in the Jhelum tract, their place being now occupied by *Æluropus repens*, and *Cressa cretiosa*.

At Pind-dadun-khan which may be considered the end of the Jelallpore tract, we have very rich alluvial soil supporting some fine trees of *Tamarindus Indica* “Imlee Umlai.”

Syzygium Jambolanum, "Jaman."

Phyllanthus Emblica, "Howla—Aowla."

Feronia elephantum, "Khair," which bears fruit.

Mangosera Indica, Mango, highly cultivated in some of the gardens.

Phœnix dactylifera, "Khujjoor," which, although we meet with occasional specimens on the river's bank between Jhelum and this place, only here occurs as naturalised, producing fruit in some quantity, and tolerable in quality.

Guilandina Bonducella, "Kut-karounja," apparently naturalised, is found in profusion near gardens.

Besides the trees mentioned, we have all the others enumerated as occurring in the Jhelum tract, and all, without exception, having a far finer appearance: this is due no doubt to the depth and richness of the alluvial soil, with a sufficiency of moisture.

From this point passing westwards we enter upon the tract of the salt plains, viz. the plains that lie between the river and the salt range to the west of Pind-dadun-khan for about 30 to 40 miles, that being about the extent of the Jhelum district.

TRACT OF THE SALT PLAINS.

In this division we have a tract of country all but a dead level, and in which the cultivation is restricted mainly to the margin of the river, the remainder being near the base of the hills, while between the two, the land is a jungly waste, owing to the excessive impregnation of the soil with saline matter. Through the whole tract, except close to the river's bank, the well water is so bad, that for water for their own use and for their cattle, the inhabitants are dependant on that collected in mud tanks; and for the watering of their crops on rain; except where, as at Keutha, a stream of fresh water comes down from the hills; and in that case it is necessarily used for irrigation. Hence a poor and scanty crop of Bajree and Jowar with a little cotton may be considered the chief products of this tract. Along the banks of the river, however, wheat and barley, with the above, and the oil-seeds are largely cultivated, and yield good crops.

On alluvial soil, as on the banks of the river, or where cultivation is carried on, the Cypress variety of the Kekur, the Baer and the Date-palm may be considered the characteristic trees.

On the land incapable of cultivation we have a jungle consisting of stunted trees, bushes and shrubs, viz.—

Tamarix Indica, "Furas."

Salvadora oleoides, "Pelu."

Prosopis spicigera, "Jand."

Acacia modesta, "Phulai."

Capparis aphylla, "Kureel," with *Acacia Arabica* and its variety *Cupressus*.

Suæda fruticosa, L.

Anabasis multiflora, Moq.

Farsetia Jacquemontii, Hf and T.

Saccharum spontaneum with *Aëluropus repens*.

Immense herds of cattle are pastured in this jungle, and their fodder seems to consist of the abovementioned shrubs and bushes more than of either of the grasses: the former when in full growth being apparently too hard for them, while the latter only springs up in any quantity during the rains, or as long as moisture lasts in the soil.

During the month of May and when the fruit of the "Pelu" is becoming ripe, whole villages of people go out and stop in the jungles, living solely upon it. This occurs more especially in the Shapore district, where a much greater extent of the jungle exists which is there called the Baer. Men and animals suffer in these jungles extremely from the want of good water, for what they drink is solely that collected from falls of rain.

The fruit of the "Jand" *Prosopis spicigera* is largely used by the natives as a vegetable diet, especially before it reaches maturity, and is considered highly nutritious.

From the "Furas," *Tamarix Indica*, both galls and manna are said to be obtained; the galls are very poor; of the manna none was met with by myself on this tree.

Where the gorges of the salt range open out from the hills into the plains, and shingle, sand and a little soil with a large amount of saline deposit, occupy the intervals between the boulders, we come upon *Rhazya stricta*, Deca, forming a shrubby jungle in itself. It spreads also beyond, to soil that is capable of producing other plants.

On the beds of the saline streams that make their exit through these gorges, *Rumex vesicarius* grows in great abundance.

From the gorges just mentioned, we naturally enough pass on to the salt range, of which we will now treat.

HILLS OF THE SALT RANGE.

In ascending through the gorges, on the red marl of the salt strata, we meet with two species (undescribed) of *Pluchea* growing in great magnificence and presenting the characters of tree shrubs. These are particularly characteristic plants of the marl.

As we rise still higher, passing above the salt strata, we come upon the "Pupper," *Buxus sempervirens*, occurring in great quantity, more particularly at the head of the gorge at Keutha, and producing wood of good quality which, however, is not used for any particular purpose by the inhabitants. The branches are, however, largely used for thatching, for which purpose the durability of the leaves renders them well fitted.

On the summit of the range, which averages 2000 feet above the plains on the south, we come upon a jungle very similar to that existing on the low ranges of hills, but consisting largely of the Olive, Cow. with *Prosopis spicigera* and an occasional *Acacia Eburnea*, in addition to the plants common in the latter. There is, however, none of the *A. Arabica*. Besides these, characteristic of the range, we have *Dodonæa Burmaniana* in great quantity.

Forskalea tenacissima.

Astragalus leuco-cephalus, Benth.

Barleria cristata.

Lindenbergia polyantha, Royle, with *Allium rubellum* and several species of *Asparagus*, viz., *racemosus*, *curillus*, &c.

On the southern aspect of the range, from its base to its top, passing up the gorges, we have *Salvadora oleoides* forming a large portion of the jungle. But the moment we rise to the actual summit, and bend our way northwards, not a single plant of it is to be seen, its distribution being limited to the west of the Surafur hills and the south of the salt range.

These jungles supply large quantities of fire-wood but no timber whatever.

THE PLAINS ON THE SALT RANGE.

These are alluvial plains occurring interspersed throughout the hills, many of them consisting of a limestone formation, and having occasionally streams of fresh water running through them. These streams in general make for the river Jhelum, and entering the salt strata, become impregnated with saline matter, which they deposit on

the salt plains beyond. Through these they are not able to cut their way, but are absorbed by the soil long before they reach the river, and thus instead of aiding in its irrigation, render it incapable of producing a vegetation useful to man.

The plains upon the salt range yield splendid crops of wheat and barley, especially the former, as also all the other crops of the Jhelum tract, except sugar-cane. In addition to these we have in the fields, as at Kulakahar and Choya-siden-sha, opium largely cultivated, as also the rose; from the latter an immense quantity of rose water is distilled, its manufacture being lucrative.

Irrigation is not common, but where streams supply water, the cultivation is laid out in terraces, walled round, to aid in a free distribution of water and to prevent the washing away of the soil.

Where these streams do not exist, water is scarce, wells being sunk generally through rock and to some depth. Hence the fields are solely dependant upon rain, and should a dry season occur, a complete failure of the crops is inevitable.

On the alluvial soil bordering the streams above mentioned, we have *Morus alba*, forming fine timber, especially at Kulakahar; also *Rhus integrerrima*, Wall.; "Kuker*" in great magnificence both at the last place and at Choya; as also *Acacia modesta*, "Phulai," attaining its greatest girth, with *Vitis vinifera* (naturalised) trailed to the top of the highest trees. The Sissoo is rare, although the largest tree of the sort I have ever seen, is at Kutas.

Besides the above—

Salix Babylonica.

Zizyphus vulgaris, "Jujuba."

Ficus Indica and *religiosa* with *Melia Azaderach* are common.

As shrubs on the hilly ground, we have generally those met with on the low range of hills, mixed, however, largely with the Olive and *Dodonæa*, and not unfrequently *Gardinia tetrasperma*, Roxb.

As weeds in the fields, the most characteristic are—

Salvia Moorcroftiana, Wall. "Kalather," met with over all the fields.

* Called also Kuker-singa, because of the horn-like protuberances that are developed upon its branches.

Edwardsia, new* sp. "Koon," said to be poisonous to cows—in great quantity at Choya.

Eremostachys Vicaryi, Benth. not common.

Gypsophila Vaccaria, L. is very common in the corn-fields at this elevation, growing along with the corn-crop.

Lithospermum arvense.

Psoralea corylifolia, L.

Gnaphalium luteo-album.

Avena fatua, L.

Lepidium draba.

Neslia paniculata.

Alhagi Maurorum.

In moist damp soil near fresh water, we have—

Herpestis monnicra.

Stachys parviflora, Benth.

Samolus Valerandi, L.

Cyperus mucronatus, Roth.

Apium graveolens, L. with

Cynodon dactylon, in great profusion.

Some fine grazing for cattle is to be had along most of the fresh water streams.

MOUNT TILLA.

The most westerly of the Ratian range of hills, is situated 17 miles due west from the town of Jhelum. Its height is 3,277 feet above the sea level. On its Eastern and Southern aspects it presents a scarped face with a direct ascent of nearly 1500 feet. The usual route to its summit is by the western side from near the village of Bagree.

It is covered with a low shrubby jungle at its base, corresponding to that met with on the low ranges of hills, but as we ascend to about 1,200 feet above the sea level, the vegetation gradually assumes a character not found in any other part of the district, and in no way analagous to that at a similar height in the salt range. This is owing to the total absence of the salt rock, which in this hill does not present itself *upon the surface*.—A saline stream makes its escape from the west side of the hill near the village of Bagree.

* *Edwardsia Hydaspica*, (Edgw.).

None of the characteristic plants of the salt marl have as yet been discovered on this hill, nor a single specimen of the *Salvadora oleoides*.

The first change that we notice in the vegetation as we ascend the hill, is that *Acacia arabica* in the form of stunted bushes gradually disappears, so that it is quite absent at about 1,200 feet. Secondly, grasses become more numerous and present a greater amount of verdure than we have as yet seen, except upon the plains on the salt range.

These grasses are—

Anthistiria anathera, Nees.

Cymbopogon Twarancusa, Roxb.

Andropogon annulatus, Forsk.

Heteropogon contortus.

Crysopogon serrulatus.

Apluda aristata, Roxb.

Panicum Petiverii, Trur.

Pennisetum cinchroides.

Panicum antidotale, Retz.

Aristida depressa, Retz.

Aristida murina, Cav.

Lappago biflora.

Cynodon dactylon, Pers.

Digitaria sanguinalis.

Eragrostis poæoides.

Dactyloctenium Ægyptiacum.

Melanocenchris Royleana, Nees.

The first six are the characteristic grasses of Mount Tilla, and cover it with a splendid herbage for cattle, from its base to its summit. This hill with its lower ridges may be considered as affording the best runs for cattle in the whole district.

Phaseolus trilobus, Ait., exists in profusion at the base of the escarpment on the east side of the hill, creeping through the long grass and matting it together.

Lantana alba, commences about an altitude of 1,000 feet, becoming more common the higher we ascend, and characterising the vegetation of the hill with its lovely white inflorescence.

Dalbergia Sissoo, "Sheshum" occurs upon the northwest slopes in

one or two places, as young trees of from 4 to 5 years' growth: here and in some ravines of the Surafur hills it seems to be rapidly becoming naturalised.

Dodonæa Burmaniana—"Syna," covers the hill from base to summit on its western slope, forming a remarkably characteristic jungle, (of which there is the analogue in the higher parts of the salt range), and along with it on the same slope, choosing as it were a similar locality, the "Khujjoor"* *Phoenix Sylvestris* which produces fruit in abundance.

Bambusa arundinacea, "Bansa"—growing in great luxuriance in a valley that looks to the south, closed in on its other three aspects by the high ridges of Mt. Tilla. Here the sun seems to have but little effect and abundance of moisture exists. Along with it, we meet, for the first time, with *Rhus integerrima*, Wall. "Kuker," presenting some fine trees and fair timber; as also *Moringa Pterygosperma*, and *Bombax heptaphyllum*, L. "Sembul," the last shewing magnificent inflorescence during March. Of this last, there are some fine trees in the valley half way up Mt. Tilla, on the usual road from Bagree.

At 1,200 feet we meet with *Physorynchus Brahuicus*, Stocks, in profusion. On the low range of hills it is rarely to be found.

Plectranthus rugosus, Benth. commences about the same height and forms a dense mass, through which it is nearly impossible to make one's way, and affording excellent cover for chukkoa; it is greedily fed on by cattle and sheep.

Plumbago Zeylanica, begins now to shew its fine white blossoms, and *Grislea tomentosa*, "Tawa" in the clefts of the rocks, presents an inflorescence only equalled in splendour of colour by that of the *Bombax* or the *Butea*. This is only to be met with, however, on the eastern face of the hill.

Olea Europæa, Cow. may be said to commence at 1,500 feet, although found occasionally below this altitude; it is in this latter case but a very small shrub. Indeed at the height abovementioned it is but a shrub, assuming however rapidly the characteristics of a tree. It does not attain its maximum growth under 3,000 feet. On the top of Mt. Tilla there are some very fine trees of it growing through the building of the fakir's temple.

* The true date palm and the *P. sylvestris* are both called Khujjoor by the natives.

At the same height, species of *Grewia* viz. *G. oppositifolia*, *villosa* and *Rottii*, begin to appear as shrubs, but as we ascend; they put on their true tree form.

We now come upon great tufts of grass, as it were, hanging from the crevices of the rocks and covering the steeper sides of the hill; viz. *Eriophorum comosum*, 'Babila,' highly valued for rope-making: the rope made from it is chiefly used for tying the earthen dishes upon the Persian wheels. Exposed to continuous wet and in constant use, a rope, the thickness of two fingers, will last during a whole year, if properly twisted.

We now have, at 2000 feet, *Mimosa rubicaulis*, in some quantity. All the good timber of this tree seems to have been cut down by the villagers and shepherds. They have no name for it except "Kekur."

Rhamnus Persica, is not uncommon on this hill, but is more common on one of the ridges of the hill to the south-west.

Rottlera tinctoria, Roxb. "Rooi, Rolee, Kamela"—exists in great quantity in the narrow valleys leading down from the main hill. Its seed vessels are highly valued as a vermifuge, and are also used to prepare a red dye.

Here also, but in one locality only, viz. on the northern ridge of the hill, we have *Forskolea tenacissima*, a characteristic salt range plant found on strata much superior to that of the salt. And very common over the whole hill is *Melhania abutiloides*, Arn.

Hibiscus Gibsonii, Stocks, occurring in some quantity in the valley through which the road leads, between the southern escarpment and the main hill.

Boerhaavia repanda, Willd., in great luxuriance along the summit of the face of the eastern escarpment.

Vitis carnosae, Wall., with *Cissampelos Pariera* are to be met with all over the hill. The latter, however, prefers the western aspect.

Colebrookia oppositifolia, Sm., at about 2,500 feet of elevation, forms a bushy thicket; mixed with it, *Hamiltonia suaveolens*, Roxb. is very common. *Barleria cristata* begins to shew its lovely pink flowers, gradually spreading over the whole hill.

Tetranthera Roxburghii, Nees,—not unfrequently met with as a tree shrub.

Kydia calycina, Roxb., chiefly as a shrub, but one or two good trees exist upon the hill. From the number of stumps to be found scat-

tered over the hill, it would seem that this tree has formerly existed in large numbers. It is very characteristic, more especially during the winter, when enormous bunches of dried flowers are seen hanging from it, the tree itself being deprived of all its foliage.

Dæmia extensa, R. Br. and *Gardinia tetrasperma* are not unfrequently to be met with over the cliffs.

Asplenium Dalhousiæ is very common in the nooks and corners of the rocks where moisture collects and affords a damp soil.

Above 2,500 feet we come for the first time upon a species of the genus *Arum*, most likely *Typhonium* (?)

Although at 1,500 feet on the rock above the fort at Mungla, *Amphicoma Emodi*, Royle, is to be found in great luxuriance, I have not obtained it on Tilla under 2,500 feet.

We now see the eastern face of the main hill covered with a shrub producing enormous palmate foliage, but as I obtained neither its fruit nor flower, I can only say that it is most likely to be a *Sterculia* (?)

A single specimen of *Cordia vestita* (?) Hf and T. occurs upon the margin of the tank on the southern shoulder of the hill. From its situation by the tank and its being the only specimen of its kind, it has most likely been introduced.

Adiantum caudatum occurs now, in great abundance in damp localities.

Celtis Caucasica as a small tree is here common, shewing tolerably good sized timber.

At 3,000 feet we come upon the *Convolvulacæ* in great luxuriance, viz., *Pharbitis nil*, *Ipomœa muricata*, Roxb., and *I. pilosa*, Choisy, with *Campanula canescens*; the last only in damp localities, where also we obtain that beautiful grass *Batrachium molle*, Nees.

Galium aparine with *Cheilanthes farinosa*, in the recesses and clefts of the rocks.

On the very summit we have *Geranium rotundifolia* and *G. lucida*? being the first of this genus as yet obtained, with *Galium aparine*, which indicate a great altitude; besides *Phyllanthus niruri*, *Clematis Gouriana*, *Jasminum grandiflora* and *Vitex negundo*, L.

On the summit of the hill we have a tolerably level piece of ground, partly cultivated by the fakirs, with a miserable attempt at a garden planted by Government; the remainder consists of a mass of jungle. Here we have a temple belonging to the fakirs, with their burying places

scattered over the top of the hill; a small house belonging to Government for the benefit of travellers; and lastly a magnificent tank fed by numerous channels running towards it, from every direction. Except from rain, neither on the summit nor indeed on any other part of the hill, is water to be had, (except from the tank already mentioned on the southern shoulder of the hill). But I have no doubt that if a well were sunk in the valley between the eastern escarpment and the main hill, water would be found at no great depth.

The vegetation on the summit is curiously varied. A splendid specimen of the *Pinus longifolia*, "Cheer," bearing fruit, was introduced 30 years ago by the *Fakirs*. The olive occurs in great luxuriance; the "Khujjoor," *Phoenix sylvestris*, yielding fruit, and the *Ficus Indica*, "Bore." The co-existence of the above four kinds of trees all in full vigour tells us that we must be in a most genial climate; one in which neither the severity of the hot weather nor the dryness of the atmosphere, is too great for the *Pinus longifolia*. Nor does it seem that the intensity of the cold in the cold weather is so extreme that the *Ficus Indica* should not but rival some of the finest specimens of its kind to be met with in the Jhelum district. Together with these two forms we have the "Khujjoor," *Phoenix sylvestris*, in its native luxuriance, with the olive and the pomegranate, *Punica granatum*.

For further information relative to the district of Jhelum, see—

Asiatic Society's Journal for 1818. The camp and battle field of Alexander and Porus, by Captain James Abbott, Bengal Artillery.

In ditto for 1849, Diary of a trip to Pind-dadun-Khan and the salt range, By Andrew Fleming, M. D., Asst. Surgeon, 7th N. I.

In ditto for 1850, Descriptive notice of the Jhelum district by L. Bowring, Bengal Civil Service.

In ditto for 1853. Report on the Geological structure and mineral wealth of the salt range in the Punjaub, &c. &c. &c., by Andrew Fleming, M. D., Edin., Asst. Surgeon, 7th N. I.

Survey of the Jhelum River by Charles Foster, Lt. I. N. in the Punjaub Govt. Reports, No. VI. for 1861, published by Govt.

REDUCED

THE DATE OF THE BENARAS

ममस्याउ०६।रात्रु गयादिउ (गिराङ्क॥

FACSIMILE OF THE DATE OF THE DIGHWA PLATE.

रात्रु ३८५ भाष्य३(८५) (गिराङ्क॥

*On a Land-Grant of Mahendrapála Deva of Kanauj.—By Bábu
RÁJENDRALÁLA MITRA, Corresponding Member of the
German Oriental Society.*

In 1848 Mr. J. W. Laidlay, then editor of the Journal, published a translation, by me, of a Sanskrita inscription incised on a large slab of copper which had been presented to the Society by the late Col. J. C. Stacy. It was the record of a gift of land by a prince of the royal house of Mahodaya (Kanauj), and remarkable for being surmounted by a figure of Bhagavatí and the genealogy of the princes named, cast in relief on a tablet of brass. A counterpart of that document has lately been found in the village of Dighwa Doobaneshar, in the Pergunnah of Manghee, Zillah Sarun. Mr. P. Peppe, to whom I am indebted for a transcript of the record, was informed that "it was dug out of a field some years ago by a Dighwaët Brahman of Chhapráh;" but Mr. James Cosserat of Motihári, who has favoured the Society with a carefully prepared facsimile of the monument, learnt on enquiry of the owners that "their ancestors found it in a temple in a ruined Musalman fort in that village, but it was so long ago that they did not seem to have any distinct tradition about it, nor to be able to give any authentic information on the subject." The weight of the plate, according to him, is thirty seers. The surmounting tablet he says "is a casting apparently of iron with a mixture of copper, and the letters raised. It appears of older date than the lower portion of copper engraved. There is a small figure of an idol at the summit; the part left uncopied is a cornice and the idol itself (very indistinct) which I have found it beyond the power of the natives here to take an impression of. The whole of the inscription, however, has been got. The upper portion has been roughly but securely joined to the lower or larger and engraved part. The plate has suffered from fire, the traces of which appear in the indistinctness of parts of the impression."

The size of the monument, the style of the character incised on it, and the tablet and the figure of Bhagavatí which surmount it, bear so close a resemblance to those of the Stacy plate that the two documents seem to have been prepared by the same artist, and inscribed by the same engraver. The genealogy of both begins with the same prince, Devas'akti Deva, but while the Dighwa plate ends with the sixth descendant Mahendrapála Deva, the Stacy record carries it

down to Vináyakapála, brother and successor of Bhoja Deva who was the immediate heir of Mahendra.

The subject of the grant in the Stacy plate is the village of Tikkarika, in the district of Benares, that of the Dighwa record the village of Pámayaka, in the subdivision of Talayiká, of the district of Srávastí.

The date of the Dighwa grant is "the 7th of the waxing moon in the month of Mágha, Samvatsara 389," the last figure being open to question. In my first reading of the Stacy plate I took its date to be "the 6th day of the dark half of the moon in the solar month of *Phálguna* Samvatsara 65;" the word "solar" being deduced from an indistinct letter which I took for ३॥ "light" or the "sun." In the redécipherment* of the record published in the XXXI. Vol. of this Journal (p. 15) Professor F. E. Hall has dismissed the figures by stating that after the word Samvatsara "follow two unrecognized numerals, denoting a dynastic year, and an indistinct compound character of unknown significance. Further on the day of the semilunation is expressed by a single numeral. It is the same as the first of the two just spoken of." On re-examining the document with the light of the Dighwa plate, I feel disposed to take the first figure for an ancient 4, being somewhat similar to the same figure in the Western caves and on coins. The second is an imperfect or partially effaced cypher, or possibly an 8, but in that case very unlike the same figure in the Dighwa plate; and the indistinct letter after it, which looks very much like a *bhra* and no figure, having the perpendicular line of the long vowel after it, a 9. The figure for the semilunation, being the counterpart of the first figure of the year, must of course be read as 4, making the date "the 4th of the wane in the month of *Phálguna*, Samvatsara 409." This would bring the record 19 years after the Dighwa plate, which would be in no way too much for the latter portion of the reign of Mahendrapála, the whole of that of Bhoja and the beginning of that of Vináyakapála. The last figures, however, being in both the documents very doubtful if we take them for initials

* It is remarkable that in this so-called "redécipherment" the only emendation of any value is the relationship of Vináyaka Pála to Mahendra. The learned Professor makes him a son, whereas my reading made him a grandson. For the rest the new reading adds little to our knowledge of the document beyond the fact of there being some obvious inaccuracies of spelling in the original which in my reading I had corrected without note, and a few mis-prints in my transcript which had escaped my eyes. The "redécipherment" did not, even in the opinion of the Professor, render a re-translation necessary.

of some now unknown words the dates would read 38 and 40, 45 or 48 as we accepted the second figure of the Stacy plate to be a cypher a 5, or an 8, giving an interval of 2, 7 or 10 years between Mahendra and Vináyaka. I annex facsimiles of the two dates, in order that others may be enabled to solve them more successfully than I have been able to do.

The word *samvatsara* means simply a year and not an era, it is impossible therefore to ascertain to what particular era allusion has been made by the two plates. Had the era of Vikrama been meant, the word *samvat* would have been preferred; besides the character of the plates is too modern to entitle them to a place in the 4th century of Vikrama. If the Ballabhi samvat be assumed the date of the Dighwa document would be carried back to $(318 + 389 = 707)$ the beginning of the 8th century, which would lead to the anachronism of making Devas'akti and his successor contemporaries of Harshavar-dhana and co-sovereigns in Kanauj in the beginning of the 8th century; even if it could be shewn that the Ballabhi samvat had extended so far to the north-east of Guzerat—the place of its origin—as Kanauj. Again, if the Harsha era be assumed,—a very likely era being a purely Kanauj one—the date of Mahendra would be brought to the end of the 10th century, when Kanauj was for certain under the Tomaras. Under these circumstances I am compelled to take the era of the records to be a local or family one, the zero of which it is impossible now to determine. This does not prevent us, however, from ascertaining the probable period when the princes under notice flourished in India. Govindarája, sovereign of Ráshtrakúta in the south Marhatta country, in a donative inscription dated S'aka 730 = A. D. 808, states that his father Paura had once entered Márwar at the head of a hostile army, and “conquered Vatsarája, who had been intoxicated with the wealth of the king of Gauḍa, which he had seized.” This Vatsarája was, we suppose, the second potentate of our list and not a prince of Marwar which he is nowhere said to have been, though he was defeated in that country. There is ample testimony to shew that Marwar and a good part of Malwa was, at the end of the 8th and the beginning of the 9th centuries, under the sovereignty of the Kanaujites, and it is more probable that a Kanauj king, in the zenith of his power, should extend his arms as far as Gauḍa on the one side and Malwa on the other, than that a prince

of Marwar should cross the territories of the Kanauj kings in quest of "the wealth of Gauḍa", which could not have been at any time so great as that of Kanauj, notwithstanding the martial successes of some of the Pála rājās of Bengal, who at one time extended their conquests as far as Benares. It is to be admitted that the name Vatsa has been borne by several kings, and that according to Mallinātha and Somadeva, a country, a town, and even a race of men have borne the same title, but the inscription under notice distinctly alludes to a king Vatsarāja who conquered Gauḍa and not to a "king Vatsa" (Vatsa rājā)—and it is evident that at the time when the said Vatsarāja lived, the conquest of Gauḍa from the west could be possible only to a Kanauj king, and therefore we may in this instance from the identity of name assume the identity of person. If this assumption be admitted Vatsarāja must have lived about the end of the eighth and the beginning of the ninth century, at the usual average period of eighteen years to a reign, from 796 to 814, his predecessor Devas'akti, the founder of the dynasty, commencing his reign from 775-76. According to this calculation the several princes will stand as follow:—

Devas'akti A. D. 775-776.*

Vatsarāja, son of D., 796.

Nāgabhatta, son of V., 814.

Rāmabhadra, son of N., 832.

Bhoja I., son of R., 850.

Mahendrapála, son of B., 868.

Bhoja II., son of M., 885.

Vināyakapála, son of M., brother of B. II., 900.

This table, however, has to be adjusted with reference to the date of the Stacy plate, which places an interval of, at the outside, only 19 years between Mahendrapála and Vināyaka. And if we provide for it by reducing the reign of Bhoja II. to eight years, we shall bring him to the middle of the eighth decade of the 9th century and make him synchronous with the Bhoja of Gwalior, with whom he was most probably identical.

The Tomaras assumed the sovereignty of Kanauj about the end of the 10th or the beginning of the 11th century, we have therefore a gap of about 80 to 100 years to bridge over to complete the list of

* In the quotation of this date in my paper on the Bhojas (ante XXXII. p. 96), a misprint has converted the 776 into 779.

Kanauj kings from Devas'akti to the end of the 12th century when the Mahomedans finally conquered the country. To fill up this gap, as far as our knowledge at present extends, we have only two names, those of Sáhasanka and Vira Siñha. The latter was the contemporary of Ádisúra king of Bengal who obtained from him five learned Brahmans to instruct his people in certain Vedic ceremonies.* This happened according to the genealogical tables and the memorial verses (*Kulapanjis* and *Kuláchúrya Kárika's*) of the Bengal Ghatakas in the S'aka year 994 = A. D. 1072. The *Khiti'sávañśavali Charita* places the event in the year 1078, and Ritter's Geography, in 1068 A. D. These dates, however, are all evidently incorrect, as they bring us to the time of Ballála Sena who lived several generations after Ádisúra. I depend therefore on the genealogical tables for the date of the latter. Of the five Káyasthas who came to Bengal on the invitation of Ádisúra three, viz., Makaranda Ghosa, Dasaratha Basu and Kálidása Mitra, acknowledged service to the Brahmans and were ennobled by the king as the highest patricians (Kulinas) of his land. The other two, Dasaratha Guha and Purusottama Datta, repudiated the right of the Brahmans to call them their servants and declined to assume the servile title Dása. Purusottam with noble pride exclaimed "A Datta was never a servant." (*Datta káro bhritya naya.*) This temerity deprived them of court favour and brought on degradation to the ranks of the plebeian or Maulika. The Kulina Káyasthas as well as the proud Datta have carefully preserved their genealogy. They hold periodical meetings (*ekajáyis*) at which all the family heralds or ghataks assemble and record the names of every succeeding generation. The last meeting of this kind was held several years ago at the house of Rájá Rádhákánta Deva when the names of the 24th generation of kulinás were duly recorded. The writer of this note is himself one of the 24th in descent from Kálidása Mitra. In some families the 26th, the 27th and even the 28th descent have already appeared, but no where later. Taking the average at 27 generations, we have at three generations to a century just nine hundred years from this date, or A. D. 964, for the time of

* The *Khiti'sa-vañśavali-charita* says, to officiate at the performance of a ceremony for obviating the evil effects of the fall of a vulture on the house top which the Brahmans of Bengal know not how to perform. The *Ghatak kárika* quoted by Rájá Rádhákánta Deva makes the ignorance more general, but does not advert to the expiation for the fall of a vulture.

the first advent of the Káyasthas in Bengal, and of the period of Vira Siṁha's reign.

Of the Brahmans who came to the court of Ādis'úra the most renowned was Bhaṭṭa Náráyana. He wrote the *Venisāṅhára* and presented it to Ādis'úra, on his reception by that monarch at his palace in Rámapála. He also wrote a treatise on religious ceremonies entitled *Prayogaratna* which is still extant. He purchased five villages from Ādis'úra which in the time of one of his descendants Bhabánanda Majumadara formed the nucleus of a large principality, that of the Nadia Rájás, who are his immediate descendants. Next to him was S'riharsha of the clan (gotra) of Bharadwája whose descendants form the present Mookerjea family of the Kulina Brahmans.* No work of any note as far as we know, has been attributed to him. It seems probable, however, that he is the same with the author of the *Naishada Charita*. That work was written by a poet of Kanauj, for he prides himself at the end of his poem for having been honoured with a betel leaf by his sovereign. He also acknowledges himself to be the author of nine different works including among others a "history of the kings of Gauḍa" (*Gauḍorvīshakulapras'asti*), "a description of the ocean" (*Aṇava varṇana*) and a refutation of some of the leading philosophical systems of the Hindus (*Akhandana khanda khadya*). Now Bengal has always been described as the Boetia of India; its name occurs but rarely in Sanskrit literature, and it is generally called in derision a country to which the Pándavas never came even for a marauding excursion, *Pándava varjita des'a*; while its kings, with the exception of some of the Pálas, were poor, insignificant and unknown. It is not likely therefore that either Bengal or its kings should have been thought of as a fit subject of praise for a royal poet like S'riharsha of Kashmir, or to a laureate of the proud court of Kanauj in the 7th century to whom the *Naishada Charita* and, by implication, the *Gauḍorvīshakula-pras'asti* have at different times been attributed. The "description of the ocean" too is not a work of that kind which is likely to proceed from men in the vale of Kashmir or the inland town of Gádhipura. To the former the snows of the Himalaya would offer a more appropriate theme for song than the distant and briny ocean. These objections do not apply to the S'riharsha of Bengal. He was

* The names of the other three Brahmans were Daksha, Vodaḡarbhā and Chhāndaḡa.

born and brought up in Kanauj, and as a court poet of that kingdom he could well pride himself on the favours he received from his sovereign. He came then to Gauda and, to propitiate his new master, thought proper to strike his lyre in praise of his family. In Bengal he must have seen the sea, for it is on record that the five Brahmans came to Gangúságara, and that offered to him a novel and majestic theme for his descriptive powers, while to display his versatility he took up the philosophical treatise *Khandana Khanda*, which is common enough in Bengal but is scarcely known in Kashmir. This assumption, however, probable as it may appear, is, it must be admitted, founded entirely upon presumptive evidence, and must await future more satisfactory research for confirmation. At present it is opposed to the opinions of the late Professor Wilson and of Dr. F. E. Hall.

With regard to *Sáhasaṅka* I have little to say beyond what is already known to Indian antiquarians. There were evidently two princes of that name in Kanauj, one a predecessor of Harshavardhana in the 6th century and the other a distant successor in the 10th, probably a contemporary of the author of the *Naishada* who is said to have recorded his biography, although that work is not now extant, and it is impossible to say to whom it referred. Its name, which is all that is left to us, is remarkable; it is *Navasáhasaṅka charita* which may mean “a new biography of *Sáhasaṅka*,” in contradistinction to an old one; or “a biography of the new *Sáhasaṅka*,” to distinguish the hero of the work from a former potentate of the same name who rivalled him in glory, or, as suggested by Professor Hall, “the biography of the nine *Sáhasaṅkas*,” who, like the nine Nandas of Pátaliputra, reigned successively in Kanauj. If the last be the correct interpretation we shall find in the eight princes of the Benares plate with a hypothetical descendant of the last of the series, just the necessary number for our purpose. In the absence, however, of the original work such speculation cannot lead to any satisfactory result.

Transcript of a copper-plate grant from Dighwa in Chhuprah.

(I.) ॐ अस्ति श्रीमहोदयसमावासितानेकनौहस्यश्वरथपत्तिसम्पन्नः सुडाचारात्परमवैष्णव (II.) महाराज श्रीदेवशक्तिदेवस्तस्य पुत्रस्तत्पादानुध्यातः श्रीभूमिकादेद्व्यामुत्पन्नः परममहेश्वर (III.) महाराज श्रीवत्सराजदेवस्तस्य पुत्रस्तत्पादानुध्यातः

श्रीसुन्दरी^fदे^dव्यामुत्पन्नः परं^g भगवती भ (IV.) क्त महाराज
 श्रीनागभट^hदे^dवत्तस्य पुत्रस्तत्पादानुध्यातः श्रीमहीसटादे^dव्यामुत्पन्नः
 परमादित्य (V.) भक्त महाराज श्रीरामभद्रदे^dवत्तस्य पुत्रस्तत्पा-
 दानुध्यातः श्रीमदप्यादे^dव्यामुत्प (VI.) न्नः परं^g भगवतीभक्त
 महाराज श्रीभोजदे^dवत्तस्य पुत्रस्तत्पादानुध्यातः श्रीचन्द्र (VII.)
 (भ)ट्टारिकादे^dव्यामुत्पन्नः परं^g भगवतीभक्त महाराज श्रीमहेन्द्र-
 पालदेवः । आवल्ली (VIII.) भुक्तःⁱ । आवल्ली मण्डलान्तःपाति
 वणयिका-विषयसम्बद्धपामयकग्रामसमु (IX.) पगतान् सर्वानेव
 यथास्थाननियुक्तान् प्रति^j वासिनश्च समा^kक्षापयति उपरि^lलि-
 (X.) खितग्रामस्त्वार्या^mयसमेत आचन्द्रार्कक्षितिकालं पूवदत्त दव-
 प्राप्यदयवजिⁿ(त) (XI.) मया पित्रोः^o पुण्याभिवृद्धये सावर्ण्यस-
 गोत्र कथुमचन्द्रगस^p ब्रह्मचारि (XII.) भट्टपद्मेसराय^qसवितुः
 कुम्भसंकान्तौ स्नात्वा प्रतिग्रहेण प्रतिपादित इति विदित्वा (XIII.)
 भवद्विस्ममनुमन्तव्यं प्रतिवासिभिरप्याक्षाश्रवणविधये भूत्वा सर्वोपा-
 यस्य संस्था (XIV.) पनायै^r इति श्रीमट्टारकः प्रयुक्तस्य शास-
 नस्य स्थिरायतः^t ॥ संवत् ३८६ माघसुदि ७ निवृद्धं ॥

a. Not legible in the facsimile, but there is space for it. The transcript prepared for Mr. Peppe has it.

b. The vowel mark is not legible.

c. The visargah is omitted in the original.

d. The vowel mark is not legible in the original.

e. In the Stacy record I took this word for *pādāntakhyāta* "celebrated after the foot of another" from *pādasya* "of foot," *ante* "after" *khyāta* "celebrated," the foot standing by a figure of synecdoche for the predecessor, this mode of expressing respect for parents and elder relatives being common in India. Accordingly we see the usual address on letters from a son to his father running, "to the auspicious lotus-like feet of my respected father so and so." *Amukapitā-thādkura-mahāsaya-s'richarāna-kamaleshu*, instead of "to my father so and so, &c." In criticising this reading of mine, Professor Hall in the XXVIIth volume of the Journal, (p. 226), observed, "This epithet would signify, if any thing 'whose toes are notorious.'" He was led to the mistake by referring to his Dictionary for the compound term *pādānta* instead of the separate words *pāda* and *anta*.

Commenting on the word *pádanudhyáta* he says, "It appears, from two examples occurring in the same inscription, that it sometimes indicates merely a kindred successor, or perhaps only a successor. Where of two brothers, the elder and younger, the latter accedes to the throne in sequence to the former, the words (?) *pádanudhyáta* are, in the cases alluded to, used to denote their relation as consecutive princes" (ante XXVIII. p. 8). Colebrooke takes the compound to mean "whose feet are revered by," and that is the correct interpretation. It is used to indicate a junior blood relation and successor but never a mere successor, for the expression of respect would be uncalled for in that case.

f. The first two syllables of the name obliterated in the original. I supply them from my reading of the Stacy plate.

g. For *parama* ; *param* is incorrect.

h. *Bhaṭa* for *bhaṭṭa*.

i. Incorrectly engraved *Yukto*.

j. The *r* of *prati* is missing.

k. The *jna* is curiously written.

l. The *i* of *ri* is omitted.

m. The *r* of *rv* is omitted.

n. The portion commencing from पुष &c. is legible enough, but of doubtful meaning. I take it for पूर्वदत्तदेवप्राप्यदाय.

o. The *ṇ* of *ṇi* is omitted.

p. I know not the meaning of the word *Chandragasa*. It is evidently intended to indicate a particular class of Brahmachári.

q. पञ्चस्राय *recte*.

r. पञ्चया in original.

s. For भट्टारक.

t. The last word is grammatically wrong.

Translation.

Om! May it prove auspicious! Possessed, through his greatness, of innumerable war-boats, elephants, cars, horse and foot soldiers, and a thorough Vaishṇava from the purity of his conduct, was the Maharāja S'ri Devas'akti Deva. His son and successor, born of S'ri Bhuyiká Deví, was the devout follower of Mahesvara Maharāja S'ri Vatsarája Deva; whose son and successor, born of S'ri Sundarí Deví, was the devout follower of Bhagavati Maharāja S'ri Nágabhāṭṭa Deva. His son and successor, born of S'ri Mahisatá Deví, was the devout follower

of the Sun Mahárāja S'ri Rámabhadra Deva, whose son and successor born of S'ri Madappá Deví, was the devout follower of Bhagavat, Maharāja S'ri Bhoja Deva. His son and successor, born of S'ri Chandra-bhaṭṭaríká Deví, was the devout follower of Bhagavatí Maharāja S'ri Mahendrapála Deva who, when in S'rāvastí, thus proclaimed to the assembled crowd of the inhabitants and neighbours of the village of Pámayaka of the subdivision (*vis'aya*) of Valayiká in the district (*Mandala*) of S'rāvastí. The aforesaid village with all its produce, exclusive of what has been already alienated as shares to divinities of the place, has been this day bestowed by me, for the promotion of my parents' virtue, after performance of ablution on the occasion of a conjunction of the sun with the aquarius, and to last for the period of the duration of the sun, the moon and the earth, upon Bhaṭṭa Padmesvara of Sávarṇa Gotra, a Brahmachári of the Kauthuma — ? Sákhi of the Sáma Veda. Knowing this, you should abide by it, and the neighbours, mindful of this order, should leave unmolested all the rights and privileges (of the donee). (This is written) for the permanency of the Edict of his auspicious Majesty. Done on the 7th of the waxing moon in the month of Mágha, Samvat 389.

P. S.—I avail myself of this opportunity to acknowledge the correctness of General Cunningham's last emendation of my reading of the Pehewa inscription. The name of Bhoja's father in that record is Rámabhadra, as pointed out by the General, and not Rámachandra as originally read by me. The great similarity between *bha* and *cha* in the mediæval Nagari and the commonness of the name Rámachandra led me into error.

The deduction, however, of the first Bhoja of that inscription being the same with the Bhoja of Gwalior is still open to question. To prove the identity the General has been put to the necessity of allowing twenty-five years to each of the eight princes of the time of Deva-sakti, when our antiquarians are all unanimously of opinion that the average period of an Indian reign has never been above eighteen years. The learned General himself, who holds the highest rank as an authority in all matters connected with Indian Archaeology, has repeatedly in his former papers adopted the same average, and I do not see any reason to depart from it in the present instance. Had the Bhoja of Gwalior been acknowledged in any record as the son of

Rámabhadra and a sovereign of Kanauj, the case would have been different, but as it stands we have simply a Bhoja at Gwalior in A. D. 876, but nothing to shew that he was in any way connected with Kanauj or Pehewa, and we cannot therefore at once accept him to be the same with the first Bhoja of Kanauj. The name Bhoja has been so frequently assumed by Indian princes from the time of the Rig Veda to within the last two hundred years, that it cannot possibly be taken by itself as a guide to the identification of persons or dates. The identity of names in such cases can never be a proof of identity of persons. No doubt the Kanaujites had for a time exercised paramount power in Gwalior, but there is nothing to prove that Bhoja son of Rámabhadra did so, nor anything to prevent Bhoja son of Mahendrapála, being the individual named in the Gwalior inscription.

The era of the Pehewa record may be that of Harshavardhana, but that of the Stacy and Dighwa plates cannot be the same, for they place an interval of 113 years between Bhoja and his son Mahendrapála. It is worthy of remark too, that it is odd, that the father and son should adopt two different eras.

General Cunningham observes that the Pehewa record as published by me comprises portions of two separate inscriptions and that I mistook them for one. In explanation of this charge I beg to state that I have never been to Pehewa myself, and that the inscription I published was communicated to the Asiatic Society by Mr. L. Bowering, C. S., who distinctly stated it to be one record, and added that it was "engraved on a tablet of red sandstone in the temple of a follower of the Gorakhnath persuasion," and not on two tablets at different places. On the face of this, all I could say at the time when I noticed the record was, that "the document was divided into two portions, first of which was in verse and comprised twenty-one lines, and the second was in prose and included eight lines." The facsimile was full of lacunæ and blots, and, as now appears, very imperfect, the prose portion containing only eight out of sixteen and a quarter lines. It is a pity that the General who has lately visited and examined the record has not given more detailed description of the places which the two inscriptions occupy in the temple, nor furnished the Society with fresh facsimiles. The missing eight and a quarter lines of the prose portion is likely to throw much new light on the question at issue.

LITERARY INTELLIGENCE.

General A. Cunningham in a letter to Mr. Grote gives the following results of his late visit to the Punjab.

During my last season's tour through the Punjab I visited all the spots that I could hear of, that gave any promise of yielding remains of interest, and although I have obtained but very few inscriptions, I believe that I have ascertained the position of Taxila in the immediate neighbourhood of Shah-ki-Dheri, beyond all doubt. I believe also that *Sangla-wāla Tiba*, or the hill of Sangāla is the actual site of the *Sangāla* of Alexander. It is a rocky hill rising to 215 feet in height above the plain, and half surrounded by a sheet of water during the rains, but which must have been a permanent lake or swamp 2,000 years ago. The site is covered with very large bricks, and has evidently been deserted for many centuries. The more modern town of *Cheka* as described by Hwen T'sang, may I think be identified with the large ruined town of *Asarur* which is still inhabited.

The point where Alexander crossed the Hydaspes may I believe be looked for a few miles above Jalālpur. I examined the whole neighbourhood carefully, and I am myself satisfied that the Greek camp must have been near Jalālpur and the Indian Camp near Mong. The latter place I look upon as the Nikaia of Alexander, and I believe that the name was changed to *Mog* or *Mong* by the Indo-Scythian king *Moas*, or *Moga*, the reputed founder of the place.

The ruined city near Darāpur, on the west bank of the Hydaspes, is now occupied and named *Dilāwar*. It is undoubtedly an ancient site, and may dispute with Jalālpur the honor of being the site of the famous Bucephala. Jalālpur itself with its precipitous hill fort of *Gir Jhāk*, is one of the most ancient places in the Punjab. I think it may be identified with the *Giri-vraja* of the Mahābhārata.

Mānikyāla is attributed to Raja *Manik*, and I believe with good reason, as I found a coin of the satrap *Zeionises* son of *Manigal*, deposited in a Tope, which I excavated, along with a relic-box marked with the Arian letter J, the initial of the name of *Jihoniya* or *Zeionises*. The relic-box itself is a perfect model of a Tope, the details of the mouldings, and the surrounding basement, corresponding exactly with those of the Great Mānikyāla Tope. But the summit is crowned by

a series of four umbrellas resting on a square pedestal, and I conclude that the great Tope itself must originally have been finished in the same manner. I am quite satisfied that Mânikyâla is the holy site where Buddha was believed to have made so many sacrifices of his body to a starving tiger. *Huta-murti*, which means 'sacrifice, or oblation, of body' is found twice in General Court's inscription, and the ground, as described by Hwen Thsang, is still red with blood of the holy Teacher.

Near Shah-ki-Dheri there are the remains of a very extensive city, with stone walls and square towers and streets at right angles, exactly like Taxila as described by Philostratus. There are also scattered around the city the remains of 30 or 40 monasteries and of not less than 50 Topes, of which two are somewhat larger than the Great Mânikyâla Tope. I discovered the base of a pure Greek Ionic column.

The parade ground of the Rawul Pindi cantonment is another ancient site, which has yielded several didrachms of Azas and Hippos-tratus besides one unique didrachm of Appollodotus.

Another ancient city exists near Hasan Abdâl and close to Baoti Pind. It possesses several Topes all of which had been opened except one, on the top of a hill, in which I obtained a gold coin of about A. D. 400 to 500.

I still adhere to my original position of Aornos at Nogram, as published in 1848. The hollow or valley on the top of the hill agrees exactly with the descriptions of Aornos, and the place is besides attributed to Raja *Vara*.

Profr. Holmboe of Christiania draws attention to further discoveries of the relations which formerly existed between Asia and Scandinavia. A summary of these is given in a letter from him to Babu Rajendralal Mitra, of which the following is a translation.

"In the memoir on the Ortug or Tolâ, I showed that the örtug of the mediæval Scandinavians was identical with the tola of the Indians; which is the more remarkable, as no other European nation has made use of a similar weight. The örtug is $= \frac{1}{8}$ eyris $= \frac{1}{4}$ of the Scandinavian mark, as in Southern India the tolâ $= \frac{1}{8}$ pala $= \frac{1}{4}$ of the sîr. Many of the ancient weights in the museums of Scandinavian countries are marked with points or circles equal in number to their

weight in örtugs. I have enumerated these at pages 1—10* and compared them at p. 13. I have shewn the probability that the above mentioned weights were used for the weighment of coins and precious metals, as the tolâ is now used in India. I have shewn that there was a period, when the half-mark or 12 örtugs was regarded as a superior unit, and that the ancient rouble of Russia corresponds in weight to the half-mark of Scandinavia. Finally I have at page 24 given a list of several Swedish, Norwegian, Danish and Indian weights, of ancient dariks and of Sassanian gold coins, which have all nearly the same weight.

A belief exists among the lower classes of Scandinavians, that a light sometimes appears over the sepulchral tumuli of pagan times, indicating that a treasure has been deposited in the tumulus. I have compared with this belief the traditions preserved in the life of the Chinese pilgrim Hwen Thsang, concerning the light which it was believed was seen over several Indian topes, and the efforts made by the Buddhist priests to imbue the people with the belief in a luminous power in the topes and dagobahs in the depths of the rock cut temples.

Previous authors have instituted a comparison between the arms of the gods of thunder, Thor and Indra, but have restricted themselves to a comparison of their form and effects. To these I have added in my memoir, a comparison of their consecrating power.

The fourth pamphlet† contains firstly a description of a little bronze hatchet, lately discovered, and secondly the inventory of a sepulchral tumulus which was opened eleven years ago at a spot, about twenty leagues south of Christiania. Among other things were the skeletons of three horses, one of which bore a saddle, the metallic parts of which were of gilt bronze. With this fact I have compared the customs of the Tartars of the 13th century, spoken of by Rubruquis and Jean du Plan de Carpin who relate that the Tartar chiefs were buried with three horses, one of them saddled."

* Om Örtug eller Tola en Skandinavisk og indisk Vægteenhed.

† Amuletter og om Stormænds Begravelse blandt Skandinaver i Hedenold og blandt Mellemasiens Buddhister.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1864.

The monthly General Meeting of the Asiatic Society of Bengal was held on the 1st instant.

Captain W. N. Lees, Vice-President, in the chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received—

1. From L. Bowring, Esq., copies of Photographs of some Inscriptions found at Anantpur.

2. From Babu Ramchunder Mitra, copy of a report of a meeting of the Bethune Society held on the 10th September, 1863, and the address to Dr. Duff from the Society, with his reply.

3. From Lieutenant R. C. Beavan, specimens of schorl in quartz and Zoological specimens, namely, two specimens of *Bungarus candidus*, one of *Calotes versicolor*, a skin of *Felis Jacquemontii* and one of a species of *Lepus*; also two Bear's skulls.

4. From Capt. A. K. Comber, Deputy Commissioner of Debrooghur through Major D. Briggs, the skin of an *Arctictis Binturong*, from the Burhampooter river.

5. From Babu Rajendra Mullick, dead specimens of *Dromaius Novæ Hollandiæ* and *Struthio Camelus*.

6. From T. Tomlinson, Esq., on behalf of His Excellency the Governor-General, a dead Tiger from the Barrackpore Park Menagerie.

7. From J. R. Macdonald, Esq., a leaf cloak such as is in common use among the Kôl labourers at Hazaribagh.

8. From Lieutenant-Colonel R. C. Tytler through A. Grote, Esq., a specimen of a new species of *Varanus* from the Andaman Islands.

9. From Mr. C. Swaris, Taxidermist to the Society's Museum, a Bhotanese sword.

10. From Lieutenant-Colonel Thuillier on the part of Mr. Mulheran of the Hyderabad Topographical Survey, a set of 18 Stereoscopic Views of the Caves of Ellora and Ajunta.

11. From A. Carlyle, Esq., copies of his work entitled "the Tale of the Battle of Padmanabham," with a Telugu translation of the same.

12. From the Government of India, through H. R. Carnac, Esq., a fine specimen of a fossil Amphibian from the Pachmari Hills.

Mr. Blanford called the attention of the meeting to this very interesting specimen, which had been expected for some time past, but had only arrived a few days ago. "It was discovered in the early part of last year by Major Gowan, exposed on the face of a block of sandstone lying on the right bank of a small mountain stream about a mile to the westward of Bijori, in the Chindwarra district. The block lay at a spot where the stream is crossed by the cattle road passing from the hill plateau of Pachmari via the Rhor pass and Bijori to Mohtoor, and the fossil appears to have been well-known to the natives as the "Machli Katta," (fish bones.) The exact spot has been marked by Lieut. Sim (who subsequently visited the place) on Mr. Medlicott's geological map of Central India, and is on a tract coloured by Mr. Medlicott as the Mahadeva sandstone, a formation of great thickness forming the mass of the Pachmari Hills and resting unconformably upon the coal and plant-bearing groups, part of which are contemporaneous with the lower part of the coal measures of the Ranigunge field. The age of the Mahadeva sandstones is unknown, no fossil remains having hitherto been found in them, but they are overlaid by trap-rocks with intercalated fresh water deposits, the age of which has been lately determined by Mr. W. T. Blanford as pre-nummulitic, while from data afforded by the late Mr. Hislop and others there seems but little doubt that these fresh water deposits are not older than the newest deposits of the Cretaceous period.

Major Gowan's report on the discovery of this fossil was forwarded to the Society by the Government of India, in May 1863, and its importance having been pointed out, the Chief Commissioner of the Central Provinces was requested to have the specimen procured and forwarded to Calcutta. The fossil was shortly afterwards removed by Lieutenant Sim, R. E., carefully packed to prevent injury, and

forwarded to Nagpore, where it remained in the charge of Mr. H. R. Carnac, awaiting an opportunity of being forwarded to Calcutta, in the charge of some trustworthy person. Meanwhile photographs of the fossils were taken by Mr. Crommelin who had kindly placed the negatives at the disposal of the Society, prints from which were exhibited at the April meeting of the Society.

"From an examination of the specimen as at present exposed, it appears to be allied either to the *Archegosaurus* or the *Labyrinthodon*, but the state of the specimen does not at present admit of its precise affinities being accurately determined. It exhibits a nearly perfect cast of the skull, the roof bones being wanting, and probably having remained attached to the matrix when the fossil was removed. The form of the skull and the position of the orbits are, however, distinctly shown; the mandible is partly preserved, but the teeth are all broken through longitudinally, and so worn away that little more than their general form can be traced. The palatal bones and all the floor of the skull are probably preserved, but hidden by the hard sandstone which fills the cavity of the lower jaw. The base of the skull is also imbedded, and the existence of condyles, the presence of which would determine its *Labyrinthodont* affinities, cannot be ascertained.

"When found, the position of the specimen was reversed, the ventral face being uppermost, and a portion of the dorsal vertebræ and ribs, or rather their impressions, being exposed on the surface of the stone.

"The ribs are short, very slightly curved and flattened at their distal extremities; their attachments are not seen. There is some question as to the centra of the vertebræ; if, as Dr. Partridge thinks, the continuous series of hour-glass-shaped sandstone bodies visible represent the centra, the notochord must have been persistent, and this character would place the fossil nearer to *Archegosaurus* than *Labyrinthodon*. Some squamose plates partially exposed on the ventral surface of the throat tend to bear out the idea that the present species is *Ganocephaloid*, but further investigation with hammer and chisel is required to settle the point.

"To whichever group this fossil may eventually prove to belong, its geological indications are much the same. The *Ganocephala* have indeed hitherto been met with only in rocks of the carboniferous age, whereas *Labyrinthodonts* are known to range from Carboniferous to Upper Trias

or possibly the Lias, but no great stress could be laid on such a degree of difference in range, the remains of such animals being everywhere rare. Both groups are characteristic of the great transition fauna intervening between that of the Silurian and Devonian systems and that of Mesozoic times. So far as one can predicate the geological age of such remains from our present knowledge, we may refer the fossil either to the Carboniferous, Permian or Triassic period, with a preponderant probability in favour of the former.

"Until the geology of that part of the Mahadeva hills in which the fossil occurs has been re-examined by some one acquainted with the ocal peculiarities of the rocks, it will be premature to offer any opinion as to the age of the Mahadeva sandstones. The belief I have entertained for some years past is, that they are cretaceous, a belief partly founded on Mr. Theobald's inference of their relation to the Baug beds, partly on their geological relations to the trap rocks already mentioned, and which rest conformably upon them; but if the specimen on the table be really from the Mahadevas, this formation must go back to a very much more ancient period. It should be mentioned as bearing on this point, that the mineral character of the matrix of the fossil is a hard gray micaceous sandstone such as is very characteristic of the coal-bearing rocks of India, but is very different from the typical sandstones of the Mahadevas, which are soft coarse grits with little specks of Kaolin, and frequently ferruginous.

"Labyrinthodont remains have twice before been discovered in India, viz. at Mangali about 120 miles south of Nagpore and in the formation which overlies the upper coal-bearing rocks of the Ranigunge coal field, and which has been termed by Mr. W. T. Blanford, the Lower Panchit Group."

In conclusion Mr. Blanford expressed the indebtedness of the Society to those gentlemen to whose exertions the Society owes this highly interesting fossil, and proposed that the special thanks of the Society be voted to Major Gowan the original discoverer, to Mr. H. Rivett Carnac, who had throughout taken an active part in procuring the fossil, and in getting it photographed, and finally in transmitting it to Calcutta; to Lieutenant Sim, R. E., who had gone to its site, expressly to obtain it, and to Mr. Crommelin, who had photographed it and presented the negative plates and several prints thereof to the Society.

This proposition was unanimously acceded to by the meeting.

A letter from L. Bowring, Esq., relating to the copper Sâshana from Mysore was read.

The following gentlemen duly proposed at the last meeting were balloted for and elected ordinary members :

Brigadier General H. G. D. Showers ; R. E. Goolden, Esq. ; J. O'B. Saunders, Esq. ; Moulvi Moula Bukhsh Khan Bahadoor and Babu Jadu Nath Mookerjee.

The following gentlemen were named for ballot as ordinary members at the next meeting :

Lieutenant H. Trotter, R. E., G. T. S., proposed by Captain Montgomerie, R. E., seconded by Lieutenant-Colonel Thuillier.

J. C. Whishaw, Esq., Civil Surgeon, proposed by Captain W. N. Lees, seconded by Mr. H. F. Blanford.

Babu Debendra Mullick, proposed by Mr. Grote, seconded by Mr. H. F. Blanford.

With reference to the proposal of Dr. Jerdon that Mr. Blyth be elected a corresponding member of the Society, the Council reported that in their opinion the proposed election would confer no additional distinction on Mr. Blyth, that gentleman being already an associate member of the Society.

The Chairman reported to the meeting that the announcement made at the last meeting that Mr. Beaufort had withdrawn from the Society was erroneous ; Mr. Beaufort's name had therefore been restored to the list of members.

The Secretary read the following letter from Colonel Thuillier :

To H. F. BLANFORD, Esq.

DEAR SIR,

6th May, 1864.

"Having gone out of the Council of the Asiatic on rotation in virtue of a principle introduced for the benefit of the Society, I do not consider myself eligible for re-election at so early a period. I regret therefore that it is not in my power to respond to the honor which the Council has been so good as to confer on me, and I must beg of them to excuse me."

Your's faithfully,

(Sd.) H. L. THUILLIER.

The report of the Council appointing Mr. H. Scott Smith as a member of their body in the place of Mr. H. Leonard was confirmed.

The Council reported that they had elected Mr. H. B. Medlicott and Mr. Oldham to the Council in the place of Colonel Dickens, who had resigned, and Colonel Thuillier who had been elected, but had declined to accept the office at present.

They further reported that the following gentlemen had been elected to the Committees:

Meteorological Committee.—Colonel H. L. Thuillier and T. Martin, Esq.

Natural History Committee.—Lieutenant R. C. Beavan.

Finance Committee.—H. D. Sandeman, Esq.

They also reported that they had appointed Mr. A. Carlyle as Officiating Curator of the Society on a salary of Rs. 250 per mensem, on the express understanding that the appointment should be a temporary one.

Communications were received—

1. From E. Thomas, Esq., a paper on Ancient Indian Weights.
2. From W. Theobald, Esq., Jr., a paper entitled "Observations on Certain Strictures of Mr. H. F. Blanford on my paper on the distribution of Indian Gasteropoda in Journal, No. 289, Page 69."
3. From Dr. A. Bastian, a copy of a translation of the oldest stone inscription found in Siam.
4. From Baboo Gopinath Sen, an abstract of the Hourly Meteorological Observations taken at the Surveyor General's Office for the month of March last.

The papers of Dr. Bastian and Mr. Theobald were read.*

Mr. Blanford in reply to Mr. Theobald's remarks, admitted that Mr. Theobald had very properly corrected him on the question of authority, and that he must therefore modify his statement somewhat carelessly made on a former occasion that no Naturalist of any eminence held the view that species were of sporadic origin. He did not think, however, that this correction made any material difference as to the real point at issue, viz. whether there were any good grounds for inferring that one and the same species had commenced its existence at more than one centre. Mr. Blanford had not seen the work quoted by Mr. Theobald, but if Mr. Theobald's quotations fairly represented the arguments for sporadic origin, he thought they were quite inconclusive, and the facts adduced in support offered nothing new or

* These will appear in due course in the body of the Journal.

not contemplated by Mr. Blanford in his former objections to Mr. Theobald's deduction. The argument was that in two distinct drainage basins, the majority of the species were distinct, whereas one, the pickerel, was common to both, and the inference drawn was that therefore the pickerel had commenced its existence as a species in the two areas independently. But similar phenomena are of common occurrence, though exceptional, as compared with the general facts of distribution—and it did not seem that they justified the conclusion drawn by M. Agassiz. It would be impossible to offer more than suggestion towards explaining the particular case quoted, in a manner reconcilable with the view that the species of pickerel had originally proceeded from a common centre, inasmuch as many very important data bearing on the case were not at hand. He would therefore make some general suggestions, and illustrate them by a parallel case, with which he was more acquainted, being in fact that which had given rise to this discussion.

When it is said that species are distinct, nothing more is as a rule really implied than that two series of forms shew such a degree of difference that it is convenient to distinguish them by different names. When the differences are small it is usual to call them varieties, but at the present day the distinction between species and varieties can be merely regarded as one of degree, and whether a new set of forms is treated as a species or variety, depends partly on the habit of the describer, partly on the amount of information he possesses as to the existence of intermediate forms.

The definition of Cuvier, which had long been accepted by naturalists, that "A species is a collection of individuals descended from one another, or from common parents, and from those which resemble them as much as they resemble themselves," is clearly of no use when the question under discussion is whether two given distinct sets of forms are, or may be, descended from a common stock. Actual degrees of resemblance are in most cases the only criteria at the command of a naturalist, and in a few cases the power of interbreeding and producing fertile progeny. But the inferences drawn from the latter are by no means always in accordance with those drawn from the former. The recent investigations of M. Ch. Naudin on the hybridity of plants proved that in certain cases, species which in external and anatomical characters were only distinguishable by great practice,

and which indeed "most Botanists fail to distinguish" resist all attempts to cross them, while others very different from each other, and universally recognised as species easily give origin to fertile hybrids. Man is generally regarded as a single species, but M. Paul Broca brings forward a multitude of facts to shew that between the different races of mankind, the degrees to which crossing is possible vary greatly, and that the Australian and European do not produce a permanent mixed breed. The same appears to be the case in Ceylon, where the Portuguese and Dutch have left scarcely any descendants of mixed blood, and where there is good reason, on excellent authority, to infer that were the English now to leave the Island, the same extinction of the mixed race would shortly supervene. Much more might be said on this point, and to show that hybridity is not a simple phenomenon, but exists in all degrees and is affected by slight changes of condition.

If, then, interbreeding be taken as the criterion of species, resemblance of apparent character which is in most cases the only point ascertained, is clearly not reliable. The Chinese and Indian pheasants interbreed freely although very different in plumage, &c., and the mere fact of two forms differing to such an extent as to be entitled to receive different names is no argument that their origin is distinct even according to our present knowledge, and on the unproved and apparently improbable assumption that forms of common descent in all cases interbreed freely.

In the case adduced by M. Agassiz, we do not know how far the species termed by him distinct are really so on other than grounds of external difference, and the case therefore cannot be argued. It may be that at a former geological period communication existed between the two basins, and that there was a dispersion of species, that since the separation certain of these have so varied in one or both areas as now to be regarded as distinct, while the pickerel has not so varied. Again, two rivers flowing respectively north and south would afford conditions so different that certain forms formerly common might become extinct in one case or the other, whether by change of climate, by collision with new species of other forms of life, in short by a change in any one of those numerous conditions which affect existence and the destruction of a balance of favourable conditions previously existing. All these are possibilities which, although they can be merely

suggested, still require investigation before the inference drawn by M. Agassiz can be admitted.—To take a case better capable of argument; that of the Hill Mollusca of Southern India. It is an actual fact that while certain of the species, as *Helix Castra* are common to two or more isolated groups, others, such as the *Diplommatinas* differ on two hill groups, but are more closely allied to each other than to their congeners on the Himalaya or elsewhere. This latter may be regarded as a case in which specific variation has supervened since that communication of conditions existed between the hill groups, which has been inferred on geological grounds. The *Streptaxes* differ less than the *Diplommatinas*, and it is questionable whether on the score of difference of external characters alone they should be treated as species or varieties, so that here we have gradations of difference up to actual identity. This is certainly in accordance with the view that variation has supervened since separation, and is not accounted for rationally by the assumption that each hill group is an original centre of specific distribution.

Mr. Theobald has much combated and ridiculed the idea of accidental distribution by floating timber, &c., but now apparently admits it as an occasional though rare phenomenon. It was never regarded by Mr. Blanford as otherwise than exceptional, but there may be other modes of distribution by transport, not yet known or fully appreciated. In a paper lately transmitted to the Linnean Society, Mr. Blanford had remarked upon certain facts of distribution of *Melania* and *Paludomi* which seemed to support Mr. Darwin's view that birds are active unconscious agents of transport. The *Melania* and *Paludomi* of marshes, tanks, estuaries, &c., which are much frequented by water fowl, are of extremely wide distribution. Those of hill streams, which are not frequented by water fowl are of very restricted range, and even in small areas, as in the hill region of Ceylon, two adjacent streams not communicating were tenanted by forms so different that they had in a great number of cases been described as distinct, although as Mr. Blanford had shown by the comparison of large numbers taken from a great variety of localities, they were almost unquestionably mere varieties, that is, that the most diverse forms were connected by intermediate gradations. How communication originally took place can only be surmised, but the comparative absence or rarity of communication had here admitted of great local

variation, which was treated as specific until a thorough investigation with ample materials had been undertaken.

The theory of common descent of animals and of plants must require centuries of investigation to establish it, but reviewing the whole history of Biology hitherto, Mr. Blanford could not but arrive at a conclusion similar to that of the veteran Schleiden. "Wonderfully strange and even absurd as the thought may appear to-day to many, that all organisms on the earth, vegetable as well as animal, extinct as well as living forms, are connected with one another as a single great family by natural descent, a man need not be a great prophet to tell, that before long, this doctrine will be the currently accepted and unquestioned property of every man of Science. Though at present many intelligent and many unintelligent voices are making themselves heard against Darwin, he has already a large number of powerful allies on his side, and the result cannot be doubtful."

The chairman then read an extract from a letter from General Cunningham to the address of Mr. Grote on the subject of the Pehewa inscription, which extract appears as a postscript to General Cunningham's paper on that subject in the present number of the Journal, p. 229.



VIEW OF THE LAKE

On Sale by H. L. Frazer

THE CLEAR WATER IN THE DISTRICT OF BASSTIN

By H. W. Smith, Surveyor General's Office, Columbia, Sept. 1904

JOURNAL

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On the application of the Characters of the Roman Alphabet to Oriental Languages.—By Capt. W. NASSAU LEES.

I cannot call the paper I am about to read to you this Evening a "scientific paper," and perhaps I owe this meeting some apology for reading it within these walls: but the name of our illustrious founder is so often associated with the question which I have discussed, and the subject is so intimately connected with the labours of such distinguished members of our Society as James Prinsep, H. H. Wilson, E. Thomas, E. C. Bayley, General Cunningham, Babu Rajendra Lal Mitra &c., that I have thought it would not prove wholly uninteresting to you.

The substitution of the Roman for Oriental alphabets is a question that about some thirty years ago occupied the attention of educationists and others in India. It did not make much progress at first, nor find favour outside missionary circles; and for a long time the subject would seem to have slumbered. Within the past few years, however, it has occupied the attention of certain distinguished members of the German school of Orientalists; Sanskrit books have been printed in it; and Dr. Sprenger, an eminent Arabic scholar, well known in India, has written two able and interesting articles in the *Augsburgh Gazette*, which within the last few weeks have been republished in Calcutta, advocating the change, as one necessary to enable the languages of the East to become the vehicles of conveying western ideas to the people of this country. As long as the discus-

sion regarding the introduction of the Roman alphabet, into India, was confined to missionaries, it was not necessary for us to meddle with it; but when it is taken up by such high authorities, as those who are now interested in it—and has been removed, as it were, from the arena of controversy, considering the important bearing it has on the intellectual progress of an empire containing very many millions of souls, it is one that ought not to be treated lightly; but in a sober and philosophic spirit, such indeed as that adopted by my esteemed friend Dr. Sprenger, in his paper alluded to.

In considering every question, however, in which a variety of interests are involved, or which is peculiarly liable to be acted upon by circumstances outside and foreign to the end ultimately to be arrived at, it ought to be a *sine qua non*, that prior to its discussion, that end should be so fixed and determined, that we shall know exactly what we desire to accomplish, and that during its discussion the arguments used shall tend solely to that finite point where *proof* of the proposition or theorem proposed for demonstration can be found.

Now in the discussions on the subject of romanizing the Oriental alphabets carried on many years ago, the parties engaged in them had far too much of the character of partizans to arrive at any sound conclusion. Dr. Sprenger has fallen into error in supposing that Dr. Tytler, the two Prinseps, and Sir Charles Trevelyan, were in accord in these discussions. They were wholly opposed; but their opposition may be traced, I think in a great measure to partizanship. In those days there were two schools of educationists in India—the orientalists and the anglicists. The former, in these discussions, was represented by James and Thoby Prinsep and Dr. Tytler. The latter by Messrs. Macaulay and Trevelyan, Dr. Duff and other missionaries. The question they fought, though nominally the battle of the alphabets, was quite as much a battle of languages, and this question has perhaps also been too much mixed up with the real one by Dr. Sprenger.

Missionaries again,—and I do not suppose they make any secret of it,—advocate the adoption of the Roman alphabet, rather because they believe it will aid them in the work of conversion, than from a conviction of its greater suitableness for the purposes of writing oriental languages, and from that source, therefore, we can hardly look for wholly unbiassed conclusions.

A third class would adopt the Roman in preference to the Oriental

characters, because books printed in them could be sold cheaper, and to this school belong, I believe, all German orientalists who are in favour of the change, except perhaps Dr. Sprenger himself. The Germans, it is an admitted fact, are the best Oriental scholars in the world. Indeed, it is almost impossible to find a Sanscrit scholar now, who is not a German; and it is a grave disgrace to England and to India that such should be the case. They buy a very great number of Oriental books, and they would naturally like that the price of these books should suit their purses. I would not, however, be understood to allude to the learned Lepsius. His papers deal chiefly with unlettered languages. Nowhere would cheap books be of greater advantage than in India, but admitting the fact, we must admit also that *that* is not the whole, nor yet the main part of the question we have to decide. Every one will readily grant that it would be an immense convenience, and an immense advantage, to have a universal alphabet—if to the difficulty of learning a new language, we had not to add the difficulty of learning a new and perhaps complicated system of letters, bristling with hooks and points. In short, since the general introduction of steam navigation and rail-roads, &c., the idea of a universal alphabet seems quite natural. Nay, since almost all civilized nations, though thousands of miles apart, can now communicate with each other, by means of electricity, it seems strange that we should not ere this have had,—not a universal alphabet; but a universal language,—so strange that were Julius Cæsar to rise from his ashes, and to ask why all the world were not speaking and writing Latin, we should be somewhat puzzled for a ready reply. In regard to language, the curse of Babel would be a convenient if not a sufficient answer; but in the matter of the alphabets we could not unfortunately excuse ourselves so easily. It will not be a waste of time then to inquire why such has not taken place; and first I will state that I propose to look at the question, not as a theological, a philosophical, or an educational question—nor a question of expediency, nor of policy, nor yet one of price; but one simply of sounds and symbols: and viewing it as such, it does not appear difficult to assign reasons why the Roman alphabet could not take the place of all the alphabets which are now used in India with advantage to the languages themselves or the people who read and write them.

Dr. Sprenger, in his article, has given us illustrations from the

Arabic alphabet ; but though he has dealt only with this one character, his proposal seems to be more comprehensive. In India, however, though we have a great many alphabets, all are off-shoots of two parent stems, or possibly in the remotest antiquity of only one. These two great progenitors of the large family of alphabets and modifications of alphabets with which medals and inscriptions have furnished us, are the *Pali*, or the true primitive alphabet of India, and the Phœnician, or Phœnicio-Babylonian alphabets. Reading briefly the historic records of these alphabets, so far as they go, we find, that though the limits of the *Pali* language and its alphabets are not very accurately known, from the widely extended range over which *lāt* and rock-cut inscriptions in this character have been found, we must concede to them an extensive domain. These inscriptions are chiefly to be found in the central belt and northern part of the Peninsula, and they carry us back 2,400 years, or to about 550 B. C. though probably the characters of this alphabet may have been in use at a much earlier period. The pure Sanskrit element would not seem to have made its appearance in India for several centuries later, or rather I should say, we have no *rock-cut* record of it. Coexistent with the *Pali* alphabet, which occupied the central division of India, for at least 250 years B. C., were the Bactrian alphabet of the North-Western, and the Dravidian languages, (apparently without any written characters) of the southern division of the Peninsula, the limits of the former extending almost to the confines of Persia, and those of the latter from the Vindian hills and the river Narbudda, to Cape Commorin. The early history of the Dravidian colony and their languages, is somewhat obscure ; but there is internal evidence in the structure of some of their languages, viz. Tamil and Telugu, to prove that, though they have occupied the South of India from very remote ages, they were of Scythian origin, and it is assumed that they entered India by the same route as the Sanskrit-speaking people. Their languages then, though at present not wholly unallied to the Indo-Aryan family, are not of them ; but their alphabets would seem to have been remotely derived from the same models, though how they came to differ in their existing forms so widely is not clear. That they are more modern does not admit of a doubt, but for the rest the matter is involved in much uncertainty. The points regarding which we are left in the dark are—When did the Sanskrit-speaking colony

come, and when they did come, whom did they find in India? Was it the original tribes of the country, and did they exterminate them so completely as to leave not a trace of their language—or was it an earlier emigration of Scythian colonists, and did they drive them southward before them so effectually as to leave no land-marks of their occupation behind them? These are questions admitting of much argument; but which I must leave to be discussed by those whom they concern—the students of language and ethnology, and turn again to our alphabets.

The Bactrian alphabet, on the contrary, owes nothing to the Indian model. It has been satisfactorily established that it is one of the many off-shoots from the Phœnician parent tree.

Now the Phœnico-Babylonic alphabet is the most ancient of which we have any historic record. Monsieur Renan in his *Histoire générale des langues Semitiques*, (probably following Gesenius who some twenty-five years previously had expressed a similar opinion,) thinks there is evidence sufficient to shew that the Hebrews wrote in this alphabet on going up out of Egypt. I cannot say any thing for or against this surmise; but be it as it may, there is little doubt that modifications of this alphabet were in spontaneous use from the banks of the Indus to the straits of Gibraltar, by the people of the whole world as it was known to the ancients, about the eighth century before Christ. From it the Greek alphabet was modelled; from it the Aramaic, the Syriac, the Hebrew, the Arabic and the many modifications of these alphabets have sprung; *and from it, also, we have the Roman alphabet.*

It would be impossible in a brief, hurried, and imperfect memorandum, such as this, to give even a cursory outline of the history of the progressive development of these alphabets, even if I had full materials for the purpose; which is not the case. For a long time we had no better guide than Gesenius' work, published now some thirty years ago; but Dr. Levy's *Phonizische Studien*, and the due de Luyne's valuable tables printed by Mr. E. Thomas, and since published inscriptions, have added much to the world's knowledge on this subject, which is at once so interesting and instructive to the palæographer, the philologist, and the historian. But still light is required,—more light,—and it is satisfactory to know that able scholars are deeply engaged in investigating the comparative palæography, as well as its

cognate subject, the comparative philology of Eastern languages. The East it is now acknowledged must be the starting point with all who would study the history of man as well as the science of language, and the art of writing. The last mail received from England, brought the announcement of the publication of no less than two books which promise to be of great value to all who are interested in these subjects, *Levy's Phonizisches Worterbuch*, or a sequel to his *Studien*, and *Spiegel's Eran das Land Zwischen der Indus und Tigris*, and our German oriental students work with such a will in the fields of oriental research, that we may confidently expect each year to increase our store of information. Whether they will succeed in finding Abraham, Zarathustra, and the leader of the Aryan colony which overran India, sitting under the same fig-tree, framing languages and alphabets for the whole world, is a question yet admitting of very great doubts, but there is no doubt that if ever they have done so, and left any traces behind them, our friends will find them.

Assuming the correctness of the facts above stated, it will be seen that excluding the immediate consideration of the Pahlawi and Zend alphabets, we have two primitive alphabets to deal with--the Indian and the Phœnician; and from these two alone the very numerous alphabets of almost of all the written languages of Europe, Africa, America, and half of Asia have been drawn.

We have the very best evidence moreover, viz. clearly written inscriptions on tablets, coins, and rocks,—to prove that many of these derivative alphabets are of very great antiquity, and this of itself, though not a practical objection to the substitution of a good for a bad, or a perfect for an imperfect alphabet, must nevertheless always present a very serious difficulty to the engrafting of *new* alphabets on *old* languages. Most nations take an intense pride in the antiquity of every thing belonging to them; and no nations possess this characteristic in a greater degree than Oriental nations. This difficulty, of course, is much heightened if the character in which the language is written, as well as the language itself, is sacred, which is the case with the two classical languages of India. It is almost superfluous to mention that the Brahmanas are of divine origin; that the language of the *Vedas* is the language of the gods; and as for their alphabet, its designation, the *Deva Nagari*, renders it unnecessary to say whence it has been derived. As if to give weight again to

their ideas regarding the antiquity of the Hindu era, its cycles have been elaborated into a system of *yugas*, which carry us back to ages quite sufficiently remote to satisfy the most ardent votary of the geologic theory.

Nor if we pursue the enquiry in the opposite direction, do we find greater encouragement for the reception of a change of alphabets. We cannot trace the Koran to its origin, for it was not created. The doctrine is one of the most noted heresies of Islamism. The *Koran* is co-existent and co-eternal with the Supreme Being, written in the Arabic characters on the *lawh i Mahfûz*, or sacred tablet, which is guarded by the angel Gabriel. As regards the Koran, moreover, an especial virtue is inherent not only in the words of the text; but in the actual letters in which they are written, for the *book* would not be the Koran, if transcribed in any others.

To obtain sympathy or support, then, from the *learned* in India, for any system that proposes the *general* substitution of a foreign alphabet for those they have been led to consider as sacred, I look upon as impossible. But were it possible, the difficulty of inducing any people to accept a new alphabet for the purposes of ordinary reading and writing, when they have one which they have used for centuries, which is already familiar to them, and which they find to answer all the purposes of life, is of itself of sufficient magnitude, to render it unwise in the advocates for so great a revolution, to encounter any obstacles that might be avoided. As an illustration of this minor difficulty, I may instance the Greek, the German, and the Russian alphabets, all of which still exist in certain portions of Europe, to the exclusion of the Roman alphabet, which has been adopted in all other countries. Some years ago indeed it was proposed to the Greeks to adopt the Roman characters; but the patriarchs rejected the idea with scorn. In Germany it has frequently, I believe, been attempted to introduce the Roman letters more generally, but except in books intended for exportation, the change does not appear to have found favour, and it is a singularly apt illustration of this difficulty, that the very articles in which Dr. Sprenger has so ably advocated the universal adaptation of Roman alphabet to Oriental languages, are printed in the old and familiar German type. Now the difference between the German and the Roman characters is comparatively trifling, and as the powers of the letters are precisely the same, for all practical purposes, the one alphabet

may be considered as good as the other. That the old alphabet then retains its hold on the Germans, furnishes us, in my opinion, with a strong proof of the very great tenacity with which a people will cling to an alphabet, when it has been so widely adopted as to have become familiar to their whole nation. Indeed, if experience is a guide, it would appear easier to change a language, than to change an alphabet.

These difficulties, however, it may be urged are, more or less, connected with the weaknesses of human nature, and may be traced to bigotry, vanity, prejudice, force of habit, false ideas of nationality, &c., all of which might be overcome by a ruling power occupying the position of the English in India; and this is in a great measure true; but admitting its truth, the most important part of the enquiry—indeed, I may say, the whole of the enquiry, will still remain, viz. the suitability of the characters of the Roman alphabet, to represent the sounds to be expressed in all the languages, both living and dead, which are in use in India. I have read a great deal that has been written on the subject, and I must confess that I have never seen this portion of it thoroughly well investigated. Indeed it is far more often settled in a very summary and off-hand manner, by a reference to some system which has already been adopted, and which has been used, it is advanced, with great success. Yet it is of the essence of the enquiry, and until it is satisfactorily disposed of, it is quite needless to refer to the many advantages that would result from the adoption of a universal alphabet, a point which I assume nobody will care to deny. Nor does the fact of a certain currency being obtained for books printed in a particular type prove what is wanting. Many people thought that putting pantaloons on Hindustanis would make English soldiers of sepoys; but it did not do so, a fact which the English discovered to their cost in 1857. After wearing them, father, son, and grandson for a whole century, on the very first favourable opportunity, they tore them off, and cast them away. And why, may I ask, did they do so? Because they found them not so suitable to their habits and customs, and the climate of their country, as the *dhotis* they had been in the habit of wearing for ages. The educated Bengalis have for a quarter of a century been familiar not only with the alphabet we use, but with the language we speak. They speak it and write it infinitely better than they do their own language, yet we do not find that when they write Bengali, they use this or any other

than the Bengali alphabet. How it would be, if the language and the Roman alphabet were familiarized, if I may use the expression, I cannot say ; a great many Bengalis now wear pantaloons, but in the matter of the alphabets experience, as at present available, is not certainly encouraging to a change.

It is surely not unnatural, that a people, after labouring for centuries to compass an important end, to invent and elaborate a system of signs and combinations of signs, and to apply them to every sound in their language, and having accomplished it, should be unwilling to resign that which had cost them so much time and trouble. The Deva Nagari alphabet, if it is the most elaborate, is also the most perfect alphabet in the world. It was modelled and improved from the Pali or most ancient Indian alphabet expressly for the Sanskrit language ; it was fashioned for this language ; it was made to fit it, and therefore it does fit it better than any other ; and it is a singular coincidence, that this fact attracted the attention of, and was noticed by the very remarkable Chinese traveller, Houden-thsang, upwards of 1000 years ago, and from his memoirs, I make the following extract :--
 “ Les caractères de l'écriture ont été inventés par le dieu Fan, (Bramâ) et, depuis l'origine, leur forme s'est transmise de siècle en siècle. Elle se compose de quarante-sept signes, qui s'assemblent et se combinent suivant l'objet ou la chose qu'on veut exprimer. Elle s'est répandue et s'est divisée en diverses branches. Sa source s'étant élargie par degrés, elle s'est accommodée aux usages des pays et aux besoins des hommes, et n'a éprouvé que de légères modifications. En général, elle ne s'est pas sensiblement écartée de son origine C'est surtout dans l'Inde centrale qu'elle est nette et correcte.”

It is unnecessary to go into a comparative analysis of the two alphabets to establish the truth of these remarks. The coat that is made for a man is likely to fit him better, than the coat that is made for somebody else, and this, it appears to me is, if not the whole question, certainly the major part of it. “ Yet” it will be urged by progressists, “ fashions may change, and it would be unjust and a hardship, to condemn an ancient friend always to appear in his antique costume, because it had once, when in fashion, been made to fit him.” I answer, that if it becomes him better than any other, it would be a far greater hardship, to make him change it to suit the taste or to please the eye of foreigners ; but even if he agreed to put on a new

coat, you would still be obliged to make one to fit him, and herein lies a very great difficulty." I consider it to be a fundamental principle of the art of palæography, that the power of each symbol should be so determined that its euphonic value in all combinations of symbols shall be fixed and not variable, as is the case with the Roman alphabet, as it has been adapted to English and some other modern tongues; that these values should be readily ascertainable, and that, as far as possible, distinct phonetic values should be represented by distinct symbols and combinations of symbols, and the same always by the same, wherever they occur. Now if we investigate the history of the progressive development of alphabets, we will find that while these rules have been steadily kept in view in the adaptation and modification of alphabets in the East, they have been systematically set aside in most modern languages of the West; and the result is, that while an educated Eastern gentleman, seldom or never makes a mistake in orthography, few Englishmen or Frenchmen can trust themselves to write their own language without a pocket dictionary at their elbow. There are again numerous letters in the Deva Nagari alphabet, for which we have no corresponding signs in the Roman alphabet, and many sounds in the former language of which no combination of the letters of this alphabet will convey to the ear even an approximate idea. And the same may be said of all the alphabets and languages derived from this source, and also, though in a less degree, of the Arabic and Hebrew alphabets. All attempts to express certain letters in the Arabic alphabet in Roman characters have failed, and for obvious reasons all future attempts will fail likewise. In short, if it be proposed to make the alphabet of any one language the basis of an alphabet for another language, its capabilities and powers must first be carefully examined with reference to the requirements of that language, and its redundancies eliminated, or its deficiencies supplied, as the case may require. This was the course adopted by the Brahmans in regard to the primitive alphabet of India, in the second and third century B. C., and this was the course adopted by the learned Lepsius in the 19th century A. D. when propounding his scheme for a missionary alphabet. He did not set up the doctrine that *any* existing alphabet, much less the Roman alphabet with its twenty-six letters, was perfect, in the universal application of the term. He assumed rather the converse, and the plan he adopted was as follows:—

Having first arranged all the sounds prevailing in the known languages of the world, to these he applied the characters of the Roman alphabet as far as they would go, and for those sounds for which he could not find corresponding signs in the Roman alphabet, he indented on other alphabets, or invented new ones, adapting thus his alphabet to his languages, not *vice versâ*.

But if no existing alphabet is so perfect as to be made applicable to all existing languages, speaking generally, the alphabets of most languages which have received such a development as to entitle them to take rank as literary languages, and all those which may be distinguished as classical, have been so far perfected in relation to these languages themselves, and their symbols and sounds have become so closely identified, that any attempt now to dis sever the one from the other, especially in the case of dead languages, would result in very serious consequences—indeed consequences so serious, in my opinion, as to give grounds for alarm, lest the true phonetic values of the original letters should soon become irremediably confused, and in the revolution of epochs, the languages themselves might be lost. This is a view of the case that will perhaps be disputed, yet it is one which will, I am sure, be clearly intelligible to all who have occupied themselves with decyphering ancient inscriptions, and are consequently aware of the stumbling block those inscriptions prove to archaeologists, and numismatists, in which a language, foreign to the transcriber, has been rendered by the ear, in a character equally foreign to the language in which it is written.

I venture to consider it proven then, that the Roman or any other modern alphabet, cannot be applied to any of the dead or living languages of India for which an alphabet has been already perfected, with advantage to those languages, and that any attempt to do so, except in so far as the transcription may suit the convenience of foreigners and ripe scholars, would only lead to very great confusion.

It remains, however, to enquire whether, setting aside those languages, and *patois*, which have not been reduced to writing, we have no languages which have received a considerable development, but for which no written character, original or adapted, has been perfected. And here our attention is at once arrested by a language which is somewhat peculiar in its characteristic—a language which is written in many characters, yet which has no alphabet of its own; which has an ex-

tensive vocabulary ; yet few words in that vocabulary can be said to belong to it ; which is at once the most widely spread, the most popular, and the most useful of the languages of India, yet of which there is no definite form or dialect that can properly be called a language of any part of India ; which cannot be developed without losing its identity, and yet which wanting, as it is, in all these, the attributes of a perfect language, has a grammatical structure which is essentially its own, and which it carries with it into whatever other language it may be merged. The language I allude to, is that which is commonly called Hindustani. It is the *lingua franca* of Hindustan, and is so universally familiar, that many I dare say will say that my remarks are paradoxical, and some that they are absurd. I venture to think that they are neither the one nor the other. But, as few will feel disposed to accept my simple word for the fact, I beg to offer the following explanation. The Hindustani language, as now existing, can hardly be called an independent language,—a language which springing from an original and ancient source, has existed, first in a primitive and rude form, and by a gradual and progressive development, always preserving its original basis, has finally received a polish, and been imbued with an elasticity, such as to make it a suitable medium for the expression of complex ideas. It cannot be said to belong to the Aryan ; it certainly does not belong to the Semitic ; it does not belong to the Scythian family of languages. It is a language, the elements of which are drawn from all these sources. The basis, that is the grammatical structure of Hindustani, if ever it was Sanskrit, is now so distinct from it, as to possess quite a character of its own, and its vocabulary is made up from languages both of the Aryan, Scythic, and Semitic families. It is so far then a composite language, but inasmuch as languages of distinct and separate origin will not readily mix, the moment any attempt at attaining a high degree of development is made, a conflict of elements takes place, which generally ends in the complete overthrow of one and the merging of what is called simple Hindustani into languages which, while they preserve in a great degree their Indian structure, indent for their vocabulary either on languages purely of Aryan, or purely of Semitic origin. This conflict is mainly attributable to the cause here assigned, the hostility of the primitive elements, and possibly of the races, but there can be little doubt that it is greatly fostered and encouraged by the maintenance of a double alphabet, and

the difficulties of fusing these opposite elements, into a composite language, in the ordinary acceptation of the words, would be considerably diminished if an alphabet could be invented that would be common to both.

The Deva Nagari alphabet is quite as unsuitable for expressing Arabic and Persian words, as the Greek alphabet is unsuitable for expressing Sanskrit words pure and derivative, and the language as now written, presents as *bizarre* and *outré* an appearance, as if a language composed of English, German, and Russian words, was written in Hebrew characters. In most composite languages, such as English or the Romance languages, the whole forms an amalgam in which sometimes, the original materials can be recognized with difficulty, and often not at all, as all will be aware who have read Dean Trench's works on the English language. But in Hindustani it is different, the materials, particularly those of Semitic origin, remain exactly as they were, and it is the same with modern Persian in regard to its Arabic words, which Sir William Jones has well illustrated in the following passage. "This must appear strange to an European reader; but he may form some idea of this uncommon mixture, when he is told that the two Asiatic languages are not always mixed like the words of Roman and Saxon origin in this period, 'The true law is right reason, conformable to the nature of things, which calls us to duty by commanding, deters us from sin by forbidding;' but as we may suppose the Latin and English to be connected in the following sentence: "The true *lex* is *recta ratio*, conformable *nature rerum*, which by commanding *vocet ad officium*, by forbidding *à fraude deterreat*." But the difference in the case of Persian is, that it and Arabic have a common alphabet while the two languages of which Hindustani is chiefly composed, have separate and distinct alphabets.

The obstacles again to fusion under present circumstances are greatly increased by distinctions of race and creed. Without entering into nice ethnological distinctions, it will be sufficient to consider that we have in India two great classes to deal with, Hindus and Musalmans. The former, in writing Hindustani, use the Deva-Nagari, or one of its derivative alphabets; the latter generally use the *Nas Talíq* or Persian character. Neither know the characters in which the others write, and as the races are prevented by religious differences from intermixing, there is neither inducement nor necessity

for improving their acquaintance with each other's customs in this respect. When letters pass between two educated gentlemen of different race and creed in India, though written in what may be called the mother-tongue of both, they must be taken to the village scribe to be read. This certainly is an anomaly—an anomaly which does not exist perhaps in any other part of the world. But we have not yet reached the end; we are introducing railways, telegraphs, and all kinds of mechanical power into India, and we are teaching sciences bristling with technical terms. A medical student who may be unable to speak a word of English, will glibly run over half the Latin terms in the pharmacopœia of medical science, and any ordinary native gardener will give the Latin botanical name for every tree and flower in a well-stocked garden. We have here, then, not an alphabet seeking for a language; we have a language seeking for an alphabet. It has greater natural claims perhaps on the Deva Nagari alphabet than upon any other, because the language, in its ancient dialectic form must have been closely allied to the Sanskrit, and the present Deva Nagari alphabet was formed from the Indian alphabet; but certain portions of the frame-work of the language are so distinct as to be deduced with difficulty from Sanskrit, and if English, Sanskrit, Arabic, and Persian words are to be adopted into the language, and one of the three alphabets is to be selected to be a common alphabet for all races who use this language throughout the country, the balance, on many grounds, is in favour of that alphabet which is used by the most highly civilized people—the ruling power.

Certainly very great difficulty would attend the inaugural measures of a comprehensive change of the kind; but these I need not discuss here, further than to add that any attempt to accomplish so great an end, must be made gradually, and with much caution.

But besides Hindustani, it must be borne in mind, that there is a very wide field that the Roman alphabet may occupy at once. I allude to the very numerous dialects which we find in all parts of India to which the civilization of the Budhists and Brahmins have not penetrated. In the province of Assam and neighbouring districts, we have eight different dialects which, are stated to be distinct languages,* having no affinity with one another.

- * 1. Garow.
- 2. Naga.
- 3. Booteah.
- 4. Khassiah.


- 5. Abor.
- 6. Mishmee.
- 7. Kamptee,
- 8. Mikir.

This is probably a mistake; but these languages are still so distinct as to be a bar to intelligible inter-communication. In addition to these, there are numerous dialects, presenting, for the most part, the characteristics of the central-Asia type of languages; but all differing from each other in a greater or less degree, and almost all not yet reduced to writing. The same remarks are applicable to Birmah proper, British Birmah, Pegu, the Tenasserim Provinces, Chittagong and Akyab.

The great majority of the languages here alluded to, having no affinity with Sanskrit, the Deva Nagari alphabet cannot be said to have any peculiar claims on them. The Missionaries on the North East frontier have adopted the Roman characters in their teachings, while the Missionaries on the South East frontier have adopted the Burmese characters. Now, much may be said against teaching uncivilized tribes a character that will not enable them to carry on business relations in writing with their neighbours; but if it is ever intended to apply the Roman alphabets to *any* of the languages of India, the best languages certainly on which to experimentalize, are those to which no alphabet has yet been naturalized.

The Missionaries in British Birmah are making very rapid progress with the instruction in Burmese and the conversion to Christianity of the Karens, and the Welsh Presbyterian Mission at Cherrapoonjee are printing some books and a dictionary in the Roman characters. The Education Department in Assam first adopted the books of the Missionaries, but have discarded them, I believe, for books printed in Bengali type. The question therefore ought to be authoritatively settled, or we shall see, what it must be confessed is not uncommon in India, one generation taking infinite pains to do that which the next will take equal pains to undo.

The conclusions then at which I have arrived are, that any attempt to adopt the Roman alphabet to the classical languages of India would be mischievous; and that all those languages for which an alphabet has already been perfected by the people speaking them, have no need of such a change; but that an attempt might be made to adopt this alphabet, or a modification of it, to all Indian languages which at present have no alphabet which can properly be called their own.



On the Buddhist Remains of Sultanganj.—By *Bábu RájENDRALÁLA MITRA.*

Ascending the Ganges from Bhágálpur, the first object of interest which arrests the attention of the traveller is a singular mass of granite towering abruptly to the height of about a hundred feet from the bed of the river. Its natural beauty and romantic situation have long since dedicated it to the service of religion; and Jangirah, the name of the rock in question, has been associated with many a tale of love and arms. It stands at a distance of about a hundred yards from the right bank immediately opposite to the mart of Sultanganj, and is surmounted by a small stone temple which is visible from a great distance, and serves as a beacon tower to the mariner. The presiding deity of the sanctuary is named Gaibinátha, a form of S'iva whose identity I cannot ascertain. Along with him are associated a number of statues and images whom the resident priests hold in such slender respect that they did not object to my scratching some of them with a penknife to ascertain the nature of the stones of which they are made.

The temple bears no inscription, and the attendant Brahmans could not give me any information regarding its history. Judging, however, from its make and appearance, I believe it cannot be more than two or three centuries old. Around it are situated a few low rooms for the accommodation of the priests.

The face of the rock is covered by a number of bassi-relievi, most of which are Hindu and include representations of Ganes'a, Hanumána, Krishna, Rádhá, Vamana, Ananta sleeping on a snake, S'iva and other Pauranic divinities. But there are a few which are decidedly of Buddhist and Jain origin. The Buddhist figures, mostly Buddha in the meditative posture, occupy more central positions than the Hindu ones and appear to be more worn away than the latter; both circumstances affording conclusive evidence of the place having been originally a Buddhist sanctuary which the Brahmans have appropriated to themselves since the downfall of Buddhism. A Jain temple still exists on one side of the rock to which a few pilgrims occasionally come to offer their adoration to Páras'wanátha the 23rd teacher of the sect.

There is only one place at the foot of the rock at which a boat can be put in where there is a landing-place, and thence a very steep and winding path leads to the summit.

According to Montgomery Martin, at the three sacred full moons, in October, January and April, (Bengali Kártika, Mágha and Vaisákha,) from twenty to thirty thousand persons attend to bathe at this place; "but the great emolument of the priests arises from about 50,000 pilgrims who at various times come to carry away a load of water which they intend to pour on the head of various celebrated images in distant parts. In the south of India I have met pilgrims carrying their load from this place; but by far the greater part goes to Devaghar in Virabhum where it is poured on the Priapus or Linga called Baidyanátha, to whom this water, taken from a scene of former pleasure, is considered as peculiarly acceptable."*

To the east of this rock on the river bank there is another mass of granite having a few carvings on its western face, and a brick-built mosque on the top of it called the *Dargah of Baishkaran*.

The village of Sultanganj stretches westward to the extent of about a mile from the foot of this rock. In a line with Jangirah the position of the village is Lat. $25^{\circ} 19' 20''$ N.; Long. $86^{\circ} 48' 25''$ E. At the time of Mr. Martin's survey, forty years ago, it contained about 250 houses, of which only two were brick-built and three tiled. The number of houses has now quintupled, and the main road in front of the mart which gives name to this place, is lined by a good many pukka godowns.

The railway station of Sultárganj stands behind this mart and at a distance of about half a mile to the south of it.

The space between the mart and the railway station forms a quadrangle of 1,200 feet by 800. It seems never to have been under much cultivation, and is covered by the debris of old buildings, the foundations of which have lately been excavated for ballast for the railway. The trenches opened along the line of the foundations are not continuous, and in several places have been filled up, but from what remains I am disposed to believe that the place was at one time divided into courtyards having lines of small cells or cloisters on all four sides. This idea has been strengthened by the discovery of a series of six chambers in a line at the south-western corner of the

* Martin's Eastern India, Vol. II. p. 38.

quadrangle. These chambers form a part of the western side of a large courtyard on the north of which Mr. Harris, Resident Engineer, East Indian Railway, under whose superintendence the excavations under notice have been carried on, has brought to light the foundations of two similar chambers. The southern and the eastern façades yet remain unexplored. But the accumulation of rubbish on those sides, rising to the height of 10 to 20 feet, clearly indicates that chambers corresponding to those on the west and north are to be met with under it.

At the middle of this long ridge of rubbish Mr. Harris has found the foundation and the side pillars of a large gateway which was evidently one of the principal entrances to the quadrangle. Similar gateways probably once existed on the other three sides, but their vestiges are no longer traceable.

The accumulation of rubbish at the south-east corner is greater than any where else, and on it is situated the bungalow of the Resident Engineer. It would be well if a shaft could be run through this mound, as it is here that relics of importance are most likely to be met with.

The chambers excavated at the south-western side are not all of the same dimensions. They measure within the walls from $12 \times 10' 6''$ to $14' \times 12'$. The depth from the top of the plinth to the lowest part of the foundation (the only portion now in situ) is 13 feet. This depth was found full of earth and rubbish, but divided at intervals of 3 or 4 feet by three distinct floors formed of concrete and stucco. The lowest shews no trace of plaster. The upper floors had openings or hatchways through which people descended to the bottom, and used the different stories as cellars or store-rooms. No valuable property or remains of corn or other goods have, however, been traced in these cellars, as most probably they had been removed before the monastery fell into the hands of the destroyer.

The interior of the walls had never been plastered, but the front, facing the courtyard, has a thick coating of sand and stucco such as are to be seen in modern Indian houses.

The bricks used in the building of these chambers measure $13'' \times 9'' \times 2\frac{1}{2}''$, and in density, colour and appearance are similar to those employed in the construction of the great temple at Buddhagayā. At Sānchi, Sarnāth and other old Buddhist remains, bricks of such large size appear to have been common, and they give a pretty close

idea of the era when they were most in use. The largest bricks known are met with in the ruins of Hastinápur, which, according to Maulavi Syad Ahmad,* measure 20 inches long, 10 broad and $2\frac{1}{2}$ thick. If they be, as has been supposed, synchronous with the heroes of the Mahábhárata they are the oldest as well as the largest known. The next in size are those from the walls of Babylon, for which the clay thrown out of the trenches surrounding the city supplied the material; they measure sixteen inches square, with a thickness of three inches. The next are those from the pyramid of Howara in Egypt. They measure $17\frac{1}{2}$ inches by $8\frac{3}{4}$ inches; the thickness being $5\frac{1}{2}$ inches. Next to them are those of Buddhagayá, Sárnáth, Sultángañj and other Buddhist localities; they vary from 13" to 14" by 8" to 10 inches, the thickness ranging from $2\frac{1}{2}$ to $3\frac{1}{2}$. This kind of brick, was in use for upwards of seven hundred years down to the fifth or sixth century of the Christian era. The bricks of the Hindu Rajas of Lilput, Avangpur, Luckerpoor are much of the same size, but of very different appearance. The early Pathans also used very large bricks, and in old Delhi they are very common. The later Pathans reduced the size of their bricks to 12 inches, and in the days of the Moguls they were further reduced to 10", hence it is that in the many palatial buildings of Akbar, Jehangir and Shah Jehan, the greatest builders of the race, we find no trace of a single large brick.

Beyond the western wall of the chambers there is the foundation of another and a broad one, which formed the boundary wall of the quadrangle. It runs due north and south and is joined by one which runs along the ridge on the southern side. Similar boundary walls, no doubt, once existed on the north and the east, but their traces have long since been effaced.

In front of the chambers there are to be seen the remains of a hall or verandah which formerly formed the most important part of the building on this side of the quadrangle. Its floor is on a level with the highest floor of the chambers, and seems to have been made of concrete and stucco, and painted over in fresco of a light ochreous colour. How it was enclosed in front has not been made out. Probably there was a range of square pillars, forming a verandah or pillared hall resembling a modern Bengal *dalan* or the *choultry* of Southern India. The floor of the courtyard has not yet been laid bare, but judging from

* Journal of the Archæological Society of Delhi, p. 50.

the position of a water-course formed of scooped flags of granite which runs under the floor of the hall and through one of the partition walls of the chambers to a drain beyond the boundary wall of the quadrangle, and which was evidently intended to carry off its drainage I am induced to believe that it stood about 3 feet lower than the hall. Similar water-pipes of granite have been met with at Buddhagayá, Sárnáth and elsewhere.

Of the relics which have been collected by Mr. Harris in course of his excavations at this place, the most important appears to be a colossal figure of Buddha which was found lying on a side of the hall described above. It had evidently been knocked down by some iconoclast before the destruction of the hall, and removed several feet away from its pedestal. The latter too had been tilted over, but not much removed from the centre of the hall which was its original position. It was formed of a slab of granite 6'--11' \times 3'--9' the thickness being 9½ inches. The statue was secured to this stone by two bolts, the remains of which are still visible. The statue is of copper and seems to have suffered no injury from the hands of the destroyer, except the mutilation of the left foot across the ankle.

Its dimensions are—

From the topknot on the crown of the head, along the back to the edge of the heel,	7	3
From do. along the front to the sole of the foot under the instep,	7	6
Round the head,	2	0
Topknot,	0	3
From bottom of topknot to forehead,	0	2½
Length of face from forehead to chin,	0	10
From chin down to wais,	2	0
From waist to sole of foot,	4	0
Round the breast,	6	7
Across the shoulders,	2	4
From shoulder-joint to elbow,	1	6
From elbow to wrist,	1	0
From wrist to end of middle finger,	1	0
Foot from heel to end of 2nd toe,	1	½

The above measurements were taken with a common tape without any reference to the principles followed by artists in the calculation

of the relative proportion of the different parts of the human figure. They disclose, however, some curious facts: thus omitting the top-knot formed of a collection of hair on the crown of the head, we find that the total length of the figure (7 feet) is to the head ($12\frac{1}{2}$ inches,)—as 1 to 6 and $\frac{7}{11}$, or in the language of artists 6 heads, 3 parts, 9 minutes, instead of the usual standard of 1 to 8, and also considerably under that of the antique statues. In the Hercules the Apollo and the Laocoon the length of the body varies from 7 heads, 2 parts, 3 minutes to 7 heads, 3 parts, 7 minutes. The tallest statue known is that of Mirinillo, and it measures 8 heads only. The length of the fathom again, which in Europe is reckoned to be the same as the height, is in our statue fully one-third more. This is owing no doubt to the belief common in India that the simian peculiarity of the hands reaching down to the knees is an emblem of divinity and universal sovereignty. It is worthy of note, however, that in a table published by Dr. Emil Schlagintweit in his recent work on Tibetan Buddhism,* the fathom of Brahmans of Upper India, is represented to be greater than the length of their body, and the Bhots have the same peculiarity in a greater degree. It is remarkable also that the latter make their Buddhas and Bodhisatvas have shorter fathoms than their genii and dragsheds. The increase in the fathom is effected by an inordinate prolongation of the hands, leaving the arm and forearm less than their natural proportions as compared to those of Indian Brahmans, of Bhots, and of Bhotanese idols; but somewhat longer than the European standard of 1 head, 2 parts and 3 minutes to the arm and 1 head, 1 part and 2 minutes to the forearm. The foot, according to modern artists, should

* I take the following from Dr. Schlagintweit's book to bring to one view the relative proportions of the different parts of the human figure compared with those of Bhot statues. The second column A has been added by me.

	A.	B.	C.	D.	E.
	Buddha from Sultanganj.	Brahmans of Upper India.	Bhots.	Buddhas, Bodhi- Sattvas, of Tibet.	Dragsheds, Genii, Lamas, of Tibet.
Total height,	1.000	1.000	1.000	1.000	1.000
Head,	0.119	0.145	0.149	0.166	0.160
Periphery round the forehead, ...	0.285	0.322	0.345	0.350	0.420
Length of Fathom,	1.342	1.025	1.069	1.080	1.117
Ditto Arm,	0.214	0.433	0.451	0.419	0.430
Ditto Forearm,	0.142	0.165	0.164	0.149	0.155
Ditto Hand,	0.142	0.107	0.110	0.110	0.110
Ditto Foot,	0.148	0.144	0.145	0.140	0.144

be one-sixth of the body, but in the statue this has been exceeded by a few minutes. The torso is slightly shorter than the Grecian standard. On the whole, even after making ample allowances for the fact that the changes which the human form undergoes from infancy to old age and in different nationalities and climates preclude the possibility of limiting its measurements to any ideal standard, it must be admitted that the artist of the statue had a very imperfect knowledge of proportion. He had evidently adopted the tall North Indian and not the squat Bhot for his model.

The figure is erect, standing in the attitude of delivering a lecture, and in this respect bears a close resemblance to the sandstone statues so largely found at Sarnath by General Cunningham. The right hand is lifted in the act of exhortation; the left holds the hem of a large sheet of cloth which is loosely thrown over the body. Both hands bear the impress of a lotus, the emblem, according to Indian chiromancy, of universal supremacy, and as such is always met with on the hands of Vishnu, Brahmá and some other Hindu divinities. The ears are pendulous and bored, and the hair on the head disposed in curled buttons in the way they are usually represented on Burmese figures, and not very unlike the buttons on the heads of some of the Nineveh bas-reliefs. The lips are thin and the face, though more rounded than oval, is not remarkable for any prominence of the cheek bone. On the forehead there is a circular *tīlak* or auspicious mark.

The material is a very pure copper cast in two layers, the inner one in segments on an earthen mould, and held together by iron bands which were originally $\frac{3}{4}$ of an inch thick, but are now very much worn down by rust. The outer layer of the copper has also oxidized in different places and become quite spongy. The casting of the face down to the breast, was effected in one piece; the lower parts down to the knee in another, and then the legs, feet, hands and back in several pieces. A hole has been bored through the breast, and chips have been knocked off from other parts of the body since the exhumation of the figure, evidently with a view to ascertain if it did not contain hidden treasure such as is said to have been found by Mahmood in the belly of the famous idol of Somnāth, but it has led to the discovery of nothing beyond the mould on which the figure had been cast. The substance of this mould looks like a friable cinder. Originally it consisted of a mixture of sand, clay, charcoal and paddy husk,

of the last of which traces are still visible under the microscope. Bábu Kánailála De, Assistant Professor of Chemistry, Medical College, who kindly undertook to analyse this black stuff for me, says that it consists of—

Silica,	73	50
Oxide of copper, peroxide of iron, alumina, lime, and magnesia,	18	0
Organic matter and moisture,	8	50
	<hr/>	
	100	00

On the annexed plate, which has been drawn from a photograph, the statue is represented with two small figures on its sides. These were found close by it in the chapel hall. They measure 1'-10½" and 1'-5" inches high respectively. They are carved in basalt and, in style and attitude, bear a very close resemblance to the copper statue; but they have each an attendant devotee kneeling before it with folded hands, and the Buddhist creed "*Ye dharmāhetu*" &c., engraved in the Gupta character on the pedestal. The small one has the same also on the back.

Among the other relics found I may mention—

1. A mutilated terra cotta figure similar to the above.
2. A large conch shell (sankh), its animal matter nearly all destroyed.
3. A great number of cowries not much affected by time.
4. A piece of elephant bone—the top of the tibia sawn both across and longitudinally, the sawing mark most distinctly visible.
5. A slip of ivory about a foot long and an inch broad; flat but not sharp: edged.
6. An Iron axe destroyed by rust, but the shape is distinct.
7. Ditto smaller.
8. Ditto very much destroyed; the ring broken off.
9. An Iron ring about three inches in diameter with a spike on one side, very much destroyed by rust.
10. A chisel with an iron handle, very rusty.
11. A copper disk or cover destroyed by rust.
12. Sitting figure of Buddha in copper, partially destroyed by rust.
13. Three standing figures in do. do.; the heads had halo which were found broken and detached.
14. The hand of a large copper figure.
15. A number of broken bits of rusty copper domestic utensils.
16. Lumps of copper ore.

17. A miniature copper bell.
18. A fragment of a crucible.
19. Lumps of clay of the same composition as the crucible.
20. Fragments of enamelled earthenware; black and variegated patterns.
21. A miniature teapot, broken;—vessel about an inch and a quarter, with a spout.
22. Miniature terra cotta chaityas, containing within the seals of the Buddhist creed, some having seals stamped on the bottom.
23. Ditto having the figure of nine chaityas stamped on its sides and of seals at the base.
24. Several of the above seals detached.
25. Balls of earth pear-shaped and perforated.
26. Cylinders of do.; both probably intended for nets, to make them sink fast.
27. A number of pebbles.
28. Fragments of red ocherous rock.
29. A number of terra cotta lamps, circular, flat-bottomed, the spout not very projecting.
30. Handles of terra cotta frying-pans.
31. Fragments of handles, spouts and covers of earthenware vessels much stronger than ordinary.
32. Ditto of terra cotta basso-relievo figures, red-glazed.
33. Head of Vishnu in baked clay, seasoned with paddy and glazed in red, with the seven-headed cobra over head (the only Hindu relie met with).
34. Well formed heads of *surki* cement plastered with stucco, one with a particularly beautiful profile.
35. Hands and feet of do.
36. Fragment of a tile with basso-relievo figures of palms.
37. A bit of crystal.
38. A round hollow piece of iron covered with copper gilt and stamped with the figure of a chaitya on each side.
39. Fragments of encaustic tiles.
40. Fragments of white stucco coloured red in fresco from the floor under the great copper statue.
41. Fragments of cylinders, red-glazed.
42. Fragments of terra cotta ornaments.

43. A number of bivalve shells.

44. Lamps of stone, similar in shape to No. 29.

The articles named above leave no doubt as to the nature of the building in which they have been found. The quadrangle was evidently a large Buddhist monastery or *Vihára*, such as at one time existed at Sárnath, Sánchi, Buddhagayá, Manikyálá and other places of note, and at its four corners had four chapels for the use of the resident monks. Two of these which abutted on the mart have already disappeared, and of the other two, that on the south-west has yielded the relics noted above, and the last remains under the railway bungalow, a most promising field for the antiquary who could devote a week or two to its exploration.

Of the history of this *Vihára* nothing is now traceable. From its extent and the style of its construction, it is evident that at one time it was a place of great repute, and the resort of innumerable pilgrims. But its glory set a long while ago, and even the name of the place where it stood is now lost in obscurity. The present appellation (Sultárganj) is quite modern, not more than two or three centuries old, and is due to a prince of the house of Akbar. Fa Hian makes no mention of it, and Heuen-Thsang talks of the ruins of several large monasteries in the neighbourhood of Bhagulpore, but gives us no clue to the one under notice. It is to be presumed therefore that it had been ruined and forsaken, or at least had fallen into decay, before the advent of the latter Chinese traveller. The inscriptions on the minor figures, in the Gupta character of the 3rd and 4th century, shew that the *Vihara* with its chief *lares* and *penates* had been established a considerable period before that time, probably at the beginning of the Christian era or even earlier, for Champa (modern Bhagulpore,) was a place of great antiquity and the Buddhist took possession of it very early as the capital of Eastern India, and established many *Viháras* and *chaityas* in and about it. Though most of these have been destroyed by the ravages of time and the ruthless hands of adverse sectarians, there still stand in its vicinity two round towers, each about seventy feet high, the names of whose founders and the object for which they had been built have long since been forgotten, but which from their close resemblance to the *pyrethra* so common in Afghanistan and elsewhere, are evidently Buddhist monuments of yore.

Though the principal residents of Buddhist monasteries were priests

who were sworn to celibacy and poverty, who shaved their heads, wore the simplest garments, and earned their subsistence by alms, still the Viháras of old were not without the possession of considerable wealth, and the proximity of a mud fort was always deemed a desirable source of security. Hence it is that large mounds, the remains of former mud forts, are generally met with in the neighbourhood of extensive monasteries. At Sárnáth a fort stood within five hundred yards of the Vihára, at Buddhagayá one was situated within a stone's throw of the great temple, and at Kusia and elsewhere the like may be seen within very short distances. It was to be expected therefore that at Sultánanj there should be a fort within hail of the monastery, and accordingly we find one to the west of it at a distance of about three quarters of a mile—a square mound of about 400 yards on each side raised to the height of about 20 feet from the plain, and now the site of an indigo factory. To the south of it there is a large tank which yielded the earth of which the mound was formed.

Another peculiarity in which the Vihára at Sultánanj bears a close resemblance to Buddhist monasteries in other parts of India, is the great abundance of the little fictile bell-shaped structures called *chaityas*. They occur either in alto-relievos as No. 22, or in bass-reliefs stamped on small tiles, as No. 23. The former generally have the Buddhist creed enclosed within or stamped at bottom, and the latter the same stamped below the figure of the Chaitya. The type seems to have been conventional and common all over India. Mr. E. Thomas found the exact counterparts of these at Sárnáth, General Cunningham noticed them at Bhilsa, and I have seen some brought from the ruins of Brahmanabad in Guzerat and now in the possession of Lady Frere. A short time ago Colonel Phayre sent a few tiles to the Asiatic Society from Burmah which, though shaped differently, and intended to hold the figure of Buddha in the centre, have the chaityas and the inscriptions so exactly alike that they may easily pass for relics from Sárnáth or Sultánanj. The inscriptions on all these are in the Kuṭila type which had a long range of four centuries from the 8th to the 11th; the monuments on which they are found, must have therefore existed at least down to the 7th, 8th or even the 9th or 10th century. The Kuṭila characters, however, could not have been current in some of the countries where they are met with, such as Burmah and Guzerat, and must have therefore been adopted as mystic or sacred

symbols in these places. It is remarkable at the same time that while the characters remained intact the "creed" failed to withstand the change of climate, and underwent several alterations of reading.

These structures are models or miniature representations of sepulchral monuments, and they owe their origin to an injunction in the Buddhist scriptures which recommends the dedication of such monuments as an act of great religious merit. Hence they have engaged the earnest attention of the followers of Gautama from an early age, and many are the ruins in India which now attest the lavish expenditure which some of its former kings and princes incurred in raising them in a manner worthy of their ambition.

They were originally hemispherical in shape and of stupendous size, rising directly from the surface of the earth like a bubble on water, and typical of the evanescent character of all worldly objects.* They are represented by the topes of Sánchi and Sátthará, which, according to General Cunningham, date as early as the 6th century before Christ, but which certainly must have existed since the fifth. Two hundred years subsequently, about the time of the third synod, the hemispheres were raised on cylindrical plinths of small height as in the chaityas around Bhilsa. Gradually the plinths were raised higher and higher, until, in the beginning of the Christian era, their altitude became equal to the diameter of the hemisphere, as at Sárnáth near Benares and in the topes of Affghanistan; and ultimately they merged into tall round towers surmounted by a dome, or bell-shaped structures with elongated pinnacles, such as the Dehgopas of Burmah or the bass-reliefs on the clay figure under notice. These were costly edifices and could be constructed only by the wealthy. But as the merit of dedicating them was not dependent upon their size, men of moderate means satisfied their religious craving by the consecration of small stone models which the clergy assured them would secure to them as much merit as the lordly structures would to their princely donors. They added that vows to dedicate such tokens were most effectual in averting an impending evil or securing an expected good. Thus a great impulse was given to this act of devotion, and the number of offerings was greatly multiplied. The poor supplied the place of stone models by little terra-cotta figures of small value, the offering of which was very much encouraged by the priesthood, as their consecra-

* Vide Cunningham's *Bhilsa Topes*, p. 169.

tion afforded the latter a small but constant source of income.* A similar cause in the present day promotes the offering of fictile models of horses to *Satyapir* and other local saints, and hundreds of them may be seen about every consecrated Banian tree in Bengal. The Buddhist figures were made after various designs and in different ways, but generally they were either cast in moulds or stamped on plastic clay. The basso-relievo tiles appear to be the most common. They contain figures of 1 to 20 or 30 chaityas impressed on them, and sometimes have also a figure of Buddha in the centre. In India they have preserved their independent character as objects of votive offering, but in Burmah they have been largely used in the ornamentation of temples and monasteries. That most if not all of them were, however, at one time votive offerings, is evident from the fact of many of them containing inscriptions recording the name of the donors. On the back of one of Colonel Phayre's tiles (No. 1) which was taken from the "upper layer of the arch of the relic chamber" of a temple at Púgán in Burmah, and which has the figures of 30 Buddhas and two chaityas impressed on it, there is a corrupt Mágadhi inscription in rude Burmese characters, which states that the tile was dedicated by one for the good of his parents and of all Buddhas past and to come. The words of the inscription as read by Burmese scholars have already been published, (*ante* p. 57) but as no attempt has yet been made to translate them and the reading appears to me to be incorrect, I here supply a different version together with a tentative translation. The reading I propose is :—

Aṭawisati mé buddha
 Tiñsasammékona saha
 Buddha íya tatta íya
 Sabbán mátu pitu ara
 Chariya putta ra a cha
 Sabba satta hitá picha
 Buddhá hitáti nágateti.

Translation—To the 28 Buddhas together with the 29th and the 30th, for the good here and hereafter of all, of my father and mother, of my tutor and his son, of all living beings, as also for the good of all Buddhas past and to come.

* Vide Col. Sykes' Note on the Miniature Chaityas, &c. in the *Journal Rl. As. Soc.* Vol. XVI. p. 37.



Notes on the Didunculus Strigirostris, or Tooth-Billed Pigeon of the Navigator Islands—the nearest living Ally to the extinct Dodo.

Communicated by Sir W. DENISON.*

[Received 4th Dec., 1863.]

Many of your readers, and especially those interested in natural history, will be glad to hear that the long lost tooth-billed pigeon, *Didunculus strigirostris*, is not quite extinct, as is generally supposed. This fact is now satisfactorily proved by a living specimen having been brought up to this city [Sydney] by Mr. J. C. Williams, H. B. M. Consul for the Navigator Islands, from Upolo, one of that group.

It will be needless to enlarge upon the great service thus rendered by Mr. Williams. Let it suffice to say that it is the only *living* specimen which has ever come under scientific notice, and in all probability will remain so. Scientific societies, both in England and Europe, have offered large rewards for this interesting bird, but it is to be hoped that if our Acclimatisation Society does purchase this bird, it will not share the fate of other rare specimens, and be sent out of the colony.

Mr. Williams has kindly allowed me to examine his specimen, which is still in Sydney; and has given me the following information respecting its habits, of which nothing has been previously made known.

The didunculus, or gnathodon, is known by the natives of the Navigator's under the name of the *manu-mea*. It was at one time very plentiful on those islands, and particularly upon Upolo, where Mr. Williams obtained his specimen; but owing to the number of cats which, having become wild, now infest the islands, this peculiar bird has become almost extinct. The natives also have had a share in its destruction, for as long as the birds could be procured in tolerable numbers, they were in the habit of making annual excursions into the mountains for the sole purpose of catching and feasting upon them. The game was secured either with bird-lime, made by mixing the sticky gum of the bread-fruit tree with oil, or by means of nets fastened to the end of long light poles and thrown over their victims, which were enticed within reach by tame decoy-birds kept for this purpose.

* These notes, apparently by Mr. Ramsay, Sir W. Denison's correspondent, comprise a printed extract from a Sydney newspaper, and a MS. description of the bird.

The manu-mea is strictly a ground pigeon, giving preference to the thickly wooded sides of the mountains, which, when those birds were plentiful, they traversed in flocks from ten to twenty in number, feeding upon various berries, and particularly upon the mountain plantain, for which they had a great liking.

When forced to take wing, they rose with a great flapping noise, which was so characteristic that even up to the present time, the saying, "as noisy as a manu-mea," is common among the natives.

The only note observed by Mr. Williams is a low plaintive cry something resembling that of a chicken, but not so shrill, nor repeated so often. The specimen which Mr. Williams has, is now about the size of our common domesticated pigeon, but as it is yet quite a young bird, it will probably grow much larger.

The natives still keep up the practice of pigeon feasting, and are using their best endeavours to exterminate the little brown ground dove, peculiar to the Navigator's Group, although at present this species still seems to be very plentiful.

In the photograph there is apparently a sort of crest on the head of the bird, this is caused by a gathering from the bird knocking himself about in its cage, it is only the feathers sticking out from the top of the head.

Didunculus Strigirostris.

Bill orange yellow at base, light horn colour nearing the tip, which is almost white with a dark line down the ridge, skin round the eye cere, fleshy orange very like the ordinary colour of Pigeon's feet, feet of colour more like the base of the bill. In the young bird the head and neck are dull slaty blue with a tinge of metallic green; breast dull dirty brown, abdomen same colour, tail and upper tail coverts, middle of back deep chestnut brown; wings brown, many feathers barred with red deep chestnut. The iris hazel brown; skin round the eye, fleshy orange. The second bird was very like the adult specimens figured in Gould's works, but not so bright.



DIDUNCULUS STINGIROSTRIS.

21
Memorandum on the Elephant Statues in the Delhi Palace.—By
Col. J. ABBOTT.

[Received 2nd December, 1863.]

In the last number of the Society's Journal, No. III. of 1863, I have read with interest General Cunningham's remarks upon the life size statues found in the Royal citadel at Delhi.

As I happened to be at Delhi when these statues were disinterred, I had opportunity of examining them and at once recognised the long sought statues, mentioned by Bernier in these words.

"The entrance of the fortress presents nothing remarkable besides two large elephants of stone placed at either side of one of the principal gates. On one of the elephants is seated the statue of Jemel (meaning no doubt Jye Mul) the renowned Raja of Chitore. On the other is that of his brother Polta (Putta). These are the brave heroes who, with their still braver mother, immortalised their names by the extraordinary resistance which they opposed to the celebrated Acbar; defending the towns besieged by that great emperor with unshaken resolution and being at length reduced to extremity, devoted themselves to their country, and chose rather to perish with their mother in sallies against the enemy, than submit to an insolent invader. It is owing to this extraordinary devotion on their part, that their enemies have thought them deserving of the statues here erected to their memory. These two large elephants, mounted by the two heroes, have an air of grandeur, and inspire me with an awe and respect which I cannot describe."

Could I have supposed that any one visiting Delhi, would not have this account fresh in memory, I would earlier have troubled you with the reference.

Regarding Chittore, Ferishta says that when Akbar was besieging Chittore, after the failure of two assaults, the emperor was so fortunate as to shoot Jugmull, whom he had observed on the ramparts directing the defence. On which the enemy lost heart, destroyed their wives and children with fire, on a funeral pile with their slain chief, and retiring to their temples refused quarter, but were slain, (apparently without resistance,) to the number of ten thousand. This Jugmull must be the same as the Jemel of Bernier.

The Hindoo account as collected by Tod from the records and traditions of Mewar is as follows.

"But the names that shine brightest in this gloomy page of the annals of Mewar, which are still held sacred by the Bard and true Rajpootre and immortalised by Akbar's own pen, are Jeimul of Bednore and Putta of Kailwa, both of the sixteen superior vassals of Mewar. The names of Jeimul and Putta are as household words inseparable, &c. When Saloombra fell at the gate of the Sun, the command devolved upon Putta of Kailwa. He was only sixteen years of age. His father had fallen in the last shock, and his mother had survived but to rear this the sole heir of their house. Like the Spartan mother of old, she commanded him to put on the saffron robe and to die for Chittore. But, surpassing the Grecian dame, she illustrated her precept by example, armed the young bride of her son with a lance and with her descended from Chittore; whence the defenders saw the young bride fall fighting by the side of her Amazonian mother. When wives and daughters performed such deeds, the Rajpootees became reckless of life. They had maintained a protracted defence and had no thought of surrender, when a ball struck Jeimul who had succeeded to the command."

The northern ramparts had been entirely destroyed by the mines of Akbar. The fatal Johur or sacrifice of females was awaited, and at its close, the gates of the fortress were thrown open, the work of destruction commenced, and few survived to stain the yellow mantle by inglorious surrender. Akbar entered Chittore and slew 30,000 of his enemies. Nine queens, five princesses, their daughters, with two infant princes, and the families of all the chieftains not at their estates, perished in the fatal Johur or in the sack. The gates were taken for the emperor's fortress at Agra.

Akbar claimed the honour of Jeimul's death by his own hand. The conqueror of Chittore evinced the sense of the merits of his foes in erecting statues to the manes of Putta and Jeimul at the most conspicuous entrance of his palace at Delhi.

I have shortened and simplified Tod's inflated narrative which is often sufficiently obscure.

The origin of these statues is still matter of uncertainty. Had they been made by Akbar or carried from Chittore by him, we might expect to find them rather at Agra, his chief capital, than at Delhi.

The stone of which the elephants are built is of black colour and slaty texture, greatly resembling that of which the Indo-Greek sculptures are wrought near the Indus. There is nothing of this kind at or near Delhi; nor do I think it is found at Chittore: but of this I am not certain. Being in blocks of moderate size it may have been brought from afar. The statues stood at the gate of the citadel of Delhi at the commencement of Aurungzebe's reign. When that monster's religious frenzy attained its height, they were probably pulled to pieces, in deference to the hatred of the orthodox for images of all kinds. Bernier states, *not* (as quoted by Tod), that they stood at the *principal* entrance to the citadel, but that they stood at *one* of the principal entrances. This was probably the Delhi gate of the citadel; so called as facing the original city of Delhi. They were found buried in old and in recent rubbish, inside the citadel, at a spot intermediate between the two principal gates, but nearer to the Delhi Gate.

The screens to the citadel gates were built by Aurungzebe himself, and they could not perhaps have been built without removing these statues, which at any rate would be most suitably posted outside the gate of the screen. Supposing them to have been pulled down accordingly, it is not to be supposed that the saintly monster would have had any share in reconstructing idols.

P. S.—In Tod's narrative we are told that there were 30,000 inhabitants in the fortress of Chittore when it opened its gates. Yet he does not say that these rushed out sword in hand upon the enemy. And from Ferishta's account we gather that they could have made little or no defence, as few if any of the assailants were slain. The spirit of manhood seems to have deserted the breasts of the males to centre in that of the women. Indeed the brutal sacrifice of the Johur whilst 30,000 of the garrison survived, or even the ten thousand reckoned by Tod, denotes anything but the spirit of heroes. Undoubted instances of the gallantry of Rajpootres are on record. But they seem at times to have despaired very early in the day. Certainly no army of undisciplined troops could have taken Chittore if manfully defended by ten thousand men.

Observations on the Geological features &c. of the Country in the neighbourhood of Bunnoo and the Sanatorium of Shaikh Boodeen.

—By C. P. COSTELLO, Esq., Asst. Surgeon, 6th Punjab Infantry.

Communicated by the Punjab Auxiliary Committee of the Asiatic Society.

[Received 16th February, 1864.]

The Bunnoo Valley is surrounded by hills on every side—on the north by the hills of the Caubul Kheye Wuzceerees which are a continuation of the Sooliman range, on the south by the Batannee range: on the east by the Khattuck hills; and on the west by the Sooliman range. I am not possessed of any geological information regarding the Caubul Kheye hills. The Batannee hills strike off at an acute angle from the Sooliman range on the west, proceed at first in a south-easterly direction until they reach Peyzoo; and then run eastwards across the Murwut Valley; and terminate by sloping off towards the Indus at the junction of this river with the Koorum below Esan Kheyl. The portion of the range next to the Sooliman hills is called the Peyzoo hills, which terminate at Peyzoo. The next portion is called Shaikh Boodeen, which is about 6 miles in length, and terminates in sand [sandstone?] hills (the highest of which is about 1200 feet above the plain below,) which form the termination of the whole range.

The Peyzoo hills are irregular, wavy, sand [sandstone?] hills with two passes through them—the first, next the Sooliman range, being called the Buenderra; the second the Peyzoo pass. I have not obtained any fossils from these hills. Each pass is intersected by numerous nullahs.

Shaikh Boodeen is about 4,500 feet above the level of the sea; and the little hill station on its summit is the frontier Sanatorium. The general dip of the strata is towards the north, and their strike from east to west. The angle which the dip forms with the horizon is a good deal more than a right angle. The upper portion of the hills is composed chiefly of limestone, which very often is stained red and yellow by peroxide and bisulphuret [?] of Iron. Lower down the hill, there is more claystone mixed with blocks of limestone; and at the foot of the hill, we meet with the low sand [sandstone?] hills continued from the Peyzoo range. This lowermost portion of the hill, is in many places covered with the *debris* of the higher parts, in the form of broken rocks

and lime mixed with sulphur [?]; this is most remarkable on the Agsun* Kheyl side. The limestone above-mentioned affords very good quick lime for building; and the stone itself is also very useful for the same purpose. The water found in springs at the foot of the hill has a strong chalybeate taste. Hitherto no springs of any consequence have been discovered on the hill higher up; but search is being made for them. The principal fossils (shells) found about the summit of the hill are Belemnites, Cardiums, Echini, and Pectens; also Turrilites, one or two specimens being in Capt. Urmston's collection which he has formed at Lahore.

This portion of the hill would therefore seem to belong to the "Upper Chalk."

On the very lowermost portion of the southern face, I have found a few specimens of a *Pecten* resembling the *Pecten Jacobæus*. The next portion of this range† is composed of sandstone hills, which are disposed in parallel ridges running from north to south. The highest ridge is about the centre of this portion of the range, the ridges on each side sloping off, on one side, towards Shaikh Boodeen, and on the other towards the Indus. From these hills, I have obtained portions of heads, teeth, tusks, vertebræ, and limbs of Mammalian animals. Amongst these, I may mention the head and teeth of the Mammoth and other species of Elephant. I have forwarded a number of these to the Lahore Exhibition; and as they are afterwards to be made over to Captain Stubbs, Offg. Sec., Punjaub Auxiliary Committee of the Asiatic Society of Bengal, I don't wish to make any special reference to any of them, until I know how far I have been correct in naming them. This terminal portion of the Batannee hills would, (on account of the occurrence in them of fossil species of the Elephant seem to belong to the Tertiary formation.

I don't know anything about the Khattuck hills. All I know of the Sooliman hills, is that the Wuzeeres find quantities of lignite and pyrites in them.

The Bunnoo Valley appears to be composed of modern alluvium. I have observed several vertical sections of the soil—some of them being from 20 to 40 feet in depth. In all cases, the sections have been formed of alternate layers of sand and conglomerate; most of the stones

* The northern side.

† Batannee.

in the conglomerate being rounded. In these layers species of *Paludina*, *Planorbis*, *Linnea*, &c. are found. The Koorum river enters the valley at its northern extremity through the Caubul Kheyl Wuzzeeree hills; the Gombelah through the same hills, but more to the west. The latter unites with the former below Lukkic, and the Koorum thus enlarged, finally empties itself into the Indus below Esau Kheyl. It is not improbable, that the Bunnoo Valley was once a lake; and that the two rivers were the feeders of this lake; which probably, finally became emptied by the water gradually cutting its way through the pass in the Khattuck hills, through which the Koorum *now* runs to join the Indus. Between the southern face of the sandstone hills, (to the east of Shaikh Boodeen), and the Indus is another range called the Betote range; and the intervening valley is called the Lâgee Valley, at the mouth of which is the village of Punniâlla.

This Betote range appears to be of the same composition as Shaikh Boodeen; at its upper portion at all events. From this upper portion, good limestone is also procured, and fossils of the same kind as on the upper portions of Shaikh Boodeen are I believe, found on it. From the middle and lower portions the following fossil shells have been procured—a good number by myself:—*Inoceramus sulcatus*, *Lima Cardiformis*, *Producta horrida*, *Producta semireticulata*, *Spirifer striata*, *Culceola sandalina*, *Uncites gryphus*; and fossil Corals—*Syringopora ramulosa*, and *Lithodendron irregulare*.* These fossils with some others, are among those which will be made over to Captain Stubbs, R. H. A.

* The author is responsible for these and other identifications.—Eds.

Extract from Report of the Operations of the Great Trigonometrical Survey of India during the year 1862-63.—By Major J. T. WALKER, R. E. Superintendent G. T. Survey.

[Received 10th November, 1863.]

In accordance with the sanction of Government, I proceeded, in the autumn of 1862, with the officers and assistants marginally detailed,* to Vizagapatam to measure a Base Line. Vizagapatam is situated nearly on the same parallel of latitude as Bombay; and is the point where the Bombay Longitudinal Series, when extended eastwards to the Madras Coast, will terminate. This series of triangles will form, with the Great Arc Meridional, the Calcutta Longitudinal, and the Coast Series, a vast quadrilateral figure, circumscribing the Meridional Series of triangles which are required as a basis for the interior topographical details. Base Lines had been measured several years ago, by Colonel Everest, at Beder, Seronj, and Calcutta, the S. W., N. W., and N. E. angles of this quadrilateral. One more Base Line remained to be measured, which, for considerations of symmetry, it was desirable to place in the vicinity of Vizagapatam.

Captain Basevi, the officer in charge of the Coast Series, being located at Vizagapatam, was directed to select the site. After several trials, owing to the difficulty of carrying a straight line, several miles in length, so as to avoid the numerous irrigation tanks with which this district is studded, he eventually succeeded in finding a suitable line, on the undulating plain between the Military stations of Vizagapatam and Vizianagram, at a distance of about fifteen miles to the west of the port of Bimlipatam. The ground was chosen before the commencement of the rainy season of 1862, when trenches were dug to carry away the expected rain fall during the monsoon, and every precaution was taken to keep the line dry. But when Captain Basevi took the field early in October, he found that the rains had been so heavy, that the surrounding tanks had been converted into lakes, and the line lay submerged under a sheet of water, in some parts as much as sixteen feet deep. By great exertions the water was drained off into adjoining ravines. A portion of the line was ready for measuring on my arrival in December, and the remainder had become fairly dried by the time it was reached, in the course of measurement.

* Messrs. Hennessy, Taylor, Campbell, Wood, Burt and Mitchell.

The apparatus employed, consisted of a set of Compensating Bars and Microscopes, on the principle of those designed by Colonel Colby, for the Ordnance Survey of Great Britain, which had been constructed under the superintendence of Colonel Everest, by whom they were brought out to India in 1832. This apparatus has been employed in measuring three Base Lines on the Great Arc, two at the north and south extremities of the Calcutta Meridional Series, and two at the extremities of the Indus Series. The length of these bases has, in each instance, been determined in terms of ten foot Standard Bar A, the unit of measure of the Indian Survey.

At the time this Standard was constructed, it was believed that the length of a well made iron bar, supported by rollers at its points of least flexure, might be considered invariable for any given temperature. But, of recent years, there has been a growing tendency to doubt the invariability which has hitherto been assumed. Series of comparisons made by the Ordnance Survey show there is much probability that the texture of an iron bar changes gradually in the course of years; for the factors of expansion obtained from groups of comparisons made at intervals a few years apart, differ from each other by larger quantities than are due to errors of observation. It is preferable, therefore, to employ several Standards, constructed of different metals, rather than to trust to the integrity of a single bar.

To ascertain whether our Standard has altered in length, it would be necessary to remeasure the whole, or part, of one of the Base Lines which were first measured after the arrival of the Bar from England. I wished to obtain some light on this subject, by remeasuring certain short sections of the Calcutta Base Line, the extremities of which were originally indicated by permanent marks. But, on examining the positions of the section markstones, I found that, though concealed from view, there had been a regular thoroughfare over them, for many years, of carts and elephants, as well as foot passengers; consequently, they must, in all probability, have been disturbed, and they cannot be safely referred to, to decide so delicate a matter as the constancy of the Standard.

Disappointed at being baffled in my efforts to investigate this matter by any simpler and shorter process than the remeasurement of a whole Base Line, I determined to mark the intermediate section stations of the Vizagapatam Base as permanently as the extremities,

in order that any future enquiry regarding the length of the Standard, at the time of the measurement of this Base Line, may be conducted without greater labour than the measurement of a short section.

It has been well said, by one of the greatest living authorities on scientific matters, that "the ends of a base line should be guarded with religious veneration." In this country they are liable to be viewed with mingled cupidity and dread; the natives sometimes fancy that money is buried below, or they superstitiously fear that the Englishman's mark will cast a spell over the surrounding district. In either case, the mark is liable to be destroyed, as has already happened at the Seronj Base Line.* To ensure the protection of the ends of the Vizagapatam Base, I have had substantial domes of cut stone masonry built over them, without any openings, so that, before the marks can be reached, the domes must be pulled down, which will be so laborious, that the Police should be able to hear of and arrest the perpetrators, before they have had time to harm the marks.

Captain Basevi, and the Assistants of the Coast Series Party, shared in the measurement of the Base Line, which occupied about two months. The length of the line is six and a half miles. It was divided into three verificatory sections, which were subsequently checked by two series of triangles, one on each flank of the base, to test the measure of each section against the others. These tests were satisfactory; for the extreme difference between the measured length of the whole base, and its computed length by triangulation from either section, has been found to be one inch. The comparison of the measured length, with the computed value brought down by triangulation from the Calcutta Base Line, is singularly satisfactory, for the error of the computed value is only a quarter of an inch, though the triangulation embraces a distance of four hundred and eighty miles,

* On this subject, the following extract is taken from a letter by Colonel Sir George Everest, C. B., to the President and Council of the Royal Society, dated 8th April, 1861:—

"The natives of India have a habit, peculiar to human beings in that state of society, of attributing supernatural and miraculous powers to our instruments, and the sites which have been occupied by them. In cases of death, or any other natural visitations, they often offer up prayers to those sites, and if the object of their prayers be not conceded, they proceed to all sorts of acts of destruction and indignity towards them; nay, as in all cases where it was practicable, my station marks were engraved on the solid rock *in situ*, they have been known to proceed in bodies, armed with heavy sledge hammers, and beat out every vestige of the engraving."

much of it passing over flat plains, which are covered with dense forest and jungle, and very difficult to work through.

On the completion of the Base Line, Captain Branfill was deputed to connect it with the principal triangles of the Coast Series, and to execute the verificatory triangulation between the sections. Meanwhile, Captain Basevi proceeded, by my instructions, to make a reconnoissance of the neighbouring territories of the Rajah of Jeypore.

It is a singular fact that, in the vicinity of the British stations of Vizagapatam and Vizianagram, and within sixty miles of a coast which has been frequented by British traders for upwards of a century, there is an extensive tract of country, subject to a friendly Rajah, of which less is known, than of districts occupied by hostile tribes, along the frontier of our recently acquired Punjab Provinces. A glance at any map of the Madras Presidency reveals a great blank in our geographical knowledge, in the tract of country which lies parallel to the coast, and North-East of the Godavery river. Its deadly reputation appears to have been a bar alike to the explorations of the curious and scientific, and to the visits of sportsmen. No regular survey of it has ever been attempted; the few places given in the map seem to have been obtained from native information, for they are generally exceedingly erroneous.

A reconnoissance of this tract was required for our own operations, in the extension of the Bombay Longitudinal Series to Vizagapatam. As any reliable information regarding lands so little known might be expected to be of much value and general interest, I was much gratified when Captain Basevi volunteered to reconnoitre this *terra incognita*; though, at the same time, I could not but feel apprehensive for his safety in a country so deadly, for his route would have to pass through dense jungle, in which it would be necessary for him to preserve his reckoning by the troublesome process of traversing; which, under such circumstances, is very laborious, and entails the necessity of performing the greater part of each day's march on foot. The inevitable exposure to be thus undergone is very great, in a tropical climate, and when the district to be traversed is known to be exceedingly feverish and unhealthy, no small amount of courage is needed, to prompt a man to volunteer for such a task.

Captain Basevi took with him one European Assistant, Mr. O'Neill, and a few natives. He, himself, fortunately escaped with a

slight attack of fever, but Mr. O'Neill suffered severely, and has not yet recovered, and the natives of the party were also, more or less, incapacitated by fever, so that but for the assistance afforded by the Rajah of Jeypore, the operations would have been stopped almost at their very commencement. The results are, a good preliminary map of Jeypore, which has been forwarded to the Surveyor General, to be lithographed and published; a report by Captain Basevi, giving details of his route, and a general description of the country; several valuable astronomical determinations of latitudes and longitudes, and barometrical determinations of heights; also memoranda of various other routes, the details of which were obtained from native information. In consideration of the great value of Captain Basevi's services, he has been permitted to proceed to Europe on furlough for one year, during which his appointment will be kept open for him.

During the summer of 1862, the Field Season of the Kashmir Survey Party, the triangulation made great progress to the east of Leh, and stations were fixed on the Chinese Frontier, from which a number of peaks in Tartary were determined. Some of these were more than one hundred miles distant, and will materially aid in the construction, from native information, of maps of districts into which the surveyors will probably be unable to penetrate. Several of the stations observed from were over 20,000 feet in height above the sea, and Mr. Johnson visited one peak of a height of no less than 21,072 feet, but, owing to a very heavy fall of snow, was unable to observe from it.

A great many points were fixed in the Pangkong district. The whole of Astor was triangulated, and several peaks were fixed to the north of Gilgit; none of these were of any great height, the highest being only a little over 19,000 feet. The natural difficulties of the country were at first much enhanced by bad weather, which came on with the heavy rains in the southern and outer Himalayan Ranges. Notwithstanding these circumstances the out-turn of work has been good, and the general progress very satisfactory, the total area of the triangulation being about 10,500 square miles, and of topography 10,400 square miles, on the scale of four miles to the inch.

The topographical operations made good progress, though not so great as would have been the case had all the assistants retained

their health. Unfortunately two of them, on entering the higher ranges, broke down completely, and a third had to leave off work early in the season. The ground sketched was generally very elevated and barren, the Surveyor's chief difficulties arising from the want of provisions and firewood, and sometimes even of fresh water. The plane table sketches required for the map of Little Tibet have been completed, and lodged in the Head-Quarters Office at Dehra. A glacier, about twenty miles in length, was discovered by Mr. Ryall at the head of the Nubra Valley. Some large glaciers were also found in the neighbourhood of the Nanga Parbat.

I fully concur in the testimony which is borne by Captain Montgomerie, to the great zeal with which these arduous Survey operations have been carried on by all the assistants under his orders. The good fortune of success has hitherto attended all undertakings executed under the superintendence of this officer.

There is much reason to expect that, if the snows are not unusually heavy, and if most of the Surveyors keep in good health, the remainder of the country to be surveyed in and around Kashmir and Ladak, will be completed during the next field season. Captain Montgomerie has made every effort to persuade the Maharajah of Kashmir to allow one of our Surveyors to go to Gilgit, and has obtained a half promise to this effect. Possibly the fear of being called to account, should any harm happen to a European in his territories, causes the Maharajah to hesitate to sanction an undertaking which might be somewhat perilous. He informed Captain Montgomerie that, during the late winter, his troops in Gilgit had been sleeping; no exacter information could be elicited than what is suggested by this metaphor. If, as Captain Montgomerie thinks likely, the sleep was that which knows no waking, the Sikh garrison of the Maharajah must have been massacred by the hill tribes, in which case there is little hope of our Surveyors being soon able to penetrate into Gilgit.

The Eastern Frontier Party, under the charge of Mr. C. Lane, Chief Civil Assistant, has been employed, throughout the Field Season, in Independent Tipperah. At the end of the preceding season this triangulation had reached a point to the South of Cherra Poonjee, on the confines of Tipperah, where the British Boundary retrogrades Westward to a considerable distance, so that the triangulation would

have had to make an extensive circuit, in its onward progress to Chittagong, had the operations been required to be kept within the British Boundary. Fortunately, Mr. Buckland, the Commissioner of Chittagong, had sufficient influence with the Maharajah of Tipperah to induce him to consent to our operations being carried across his territory, on the direct line to Chittagong.

Mr. Lane proceeded, in the first instance, to Agartolla, the chief town of Tipperah, where the Maharajah resides; and there he succeeded in securing the friendship and good-will of the Prince and his Court to an extent to justify the expectation, which was subsequently realized, of obtaining their cordial assistance and co-operation. Mr. Lane deserves much credit for the tact he has displayed in cultivating amicable relations with the barbarous races that inhabit the hill country of Tipperah, who have long been a terror to the industrious population of the plains within the British Frontier. Mr. Lane has sent a valuable report on the portion of Independent Tipperah traversed by himself and Assistants during the past Field Season, from which extracts will be given in an appendix to this Report.*

* The duty of selecting stations for the Triangulation devolved on Mr. Rossebrode, than whom the party could not have had a better pioneer. The following simple narrative of his operations is extracted from his letters:—
“When the Kookies were apprized of my arrival at Ueara, they naturally concluded that I had come to apprehend and punish them for the robberies and murders they had perpetrated on our frontier. They hid themselves in the jungles, and left their villages. With much persuasion the Rajah’s people brought them to my camp. They watched all my proceedings, and asked me no end of questions. I always keep a man near me to interpret, and I answer every question they put me; all seem satisfied with my answers, and the confidence I place in them. Of course my movements are slow, because my work has the greatest difficulties to contend with; the inhabitants must be conciliated, the site to be fixed upon must be traced and found, and cleared of jungle. To fix on sites at all in this dense and almost uninhabited forest, in which the sun can seldom be seen, is a feat any man may be proud of, especially when the inhabitants try to mislead. I hope to get on faster, when I divest the minds of these savages of all suspicion. I am all day long climbing or descending hills, or wading through water. Wild elephants and buffaloes are numerous, and may be come upon suddenly, when wading through the water-courses. Whenever you see a bamboo signal, avoid the direction it points to, because an unerring arrow is placed there, with a bow strong enough to give an elephant his death blow. The Kookies think of nothing but eating and drinking. Feeding them occasionally is a good plan, and they would become very much attached to you, and follow you like dogs, and, no doubt, prove faithful, and work well, if well fed. Last year I had to deal with the Nagas and Kookies of Cachar, as well as those on the Manipoor frontier. They are the same filthy, naked savages as their brethren in Independent Tipperah. They frequently enquired whether I knew of Captain Guthrie, who made the road from Cachar to Manipur, over the hills, and they said he was the best sahib they had ever met with, and gave them buffaloes, cows, pigs, and goats to eat daily, and grog to drink, so that, even now, they think of his feasts.

The East Calcutta Longitudinal Series Party was formed on the 1st September, 1862, and placed under the charge of Lieutenant Thuillier. The object of this Series is to become the basis for the surveys of the districts of Nuddeah, Jessore, and on, *viâ* Dacca, to the Eastern Frontier, along a parallel of latitude slightly North of Calcutta. The publication of the sheets of the Indian Atlas, which embrace these districts, has long been delayed for want of this triangulation.

The party proceeded from Dehra Doon, by steamer and railway, to Calcutta, where they took the field in November, on the termination of the rainy season. Operations were commenced at Chinsurah, on a side of the Calcutta Meridional Series. Much assistance was derived from a carefully executed Map, prepared in the Surveyor General's office, by which Lieutenant Thuillier was enabled to lay out his lines so as to pass through a minimum amount of property. In working through forests and jungle, it is usual, in the first instance, to cut a narrow glade, in a perfectly straight line, through all intermediate obstacles, in the direction of the required station; when this

"I must notice one peculiarity among the Kookies. They all assemble from adjoining villages of the same tribe, and perform the work allotted to them, and share the hire. If you want twenty men from a village, and there are sixty in that village, all will come, whether you wish it or not. If they have to cut jungle, they will all do it; if they are to carry loads, they will divide the twenty loads into sixty, and each man will carry something. One man will never act as a guide, or do any work singly; he must have a companion, and both must be paid. I have tried to break through this habit, but have been told that, if all are not allowed to work, they will not come at all. One might suppose that sixty men would finish the work sooner than twenty, but this is not the case; they eat three times a day, will not begin work before nine, they work until twelve, and then walk off, without asking or telling anybody. They remain away two hours, cooking and eating, and then return and work till an hour before sunset. During the working hours, some are smoking, some making drinking mugs from the bamboo, and others amusing themselves; half are thus occupied, while the remainder are working, and then they change about, and those who are relieved smoke, making drinking mugs, walking sticks, or otherwise amuse themselves. The Rajah's agents have no control over them, and they do not always obey their own Sirdars.

"A Kossyah coolie is really worth four Kookies. When a Kossyah carries a light load, or is lazy, he is called a Kookie by his companions, which annoys him so that he will carry the heaviest load, or tuck up his sleeves, and work in right good earnest. I attribute the Kookie's want of energy and inability to carry loads to the excessive use of spirits, which are distilled in every hut, and partaken freely by every member of the family. There are many Chiefs among the Kookies in the Tipperah Raj. These are all called Rajahs; they have their Wuzoers, Nazirs, and Sirdars, and a number of servants of both sexes. The Kookies have no written language. The Rajahs never pay visits, even to the Maharajah, and their Wuzoers and Nazirs are sent to the Court only on very important occasions."

trial line has been carried over a distance of eight to ten miles, the ground beyond is carefully reconnoitered for a suitable site, to which a line is cut from a convenient point in the trial line; thus two sides and the included angle of a triangle are given, with which data it is easy to ascertain the direct line between the two stations, which is then cleared to obtain mutual visibility. Owing, however, to the valuable nature of the property through which the triangles were carried, it was necessary to run a traverse along each line, with numerous intermediate bends, to avoid houses and orchards. In clearing the final line, great caution was requisite to prevent any tree from being cut down needlessly, a matter of some importance in Bengal, where every tree is more or less valuable, and has to be paid for. These circumstances greatly increased the labour of the preliminary operations, and protracted them over a longer period than is usual.

Further delay was caused in building the principal stations. These are usually, towers, with a central pillar, four feet in diameter, of burnt brick and lime masonry, surrounded by a platform of unburnt bricks and mud, fourteen to sixteen feet square, the whole raised to a height of twenty to forty feet, according to the nature of the obstacles to be overlooked. This structure has been adopted on account of its cheapness, and the rapidity with which it can be constructed; it has hitherto been found to be well adapted for our requirements. But it appears to be inapplicable for the rainy and moist climate of Eastern Bengal, where unburnt bricks rarely have an opportunity of drying sufficiently to be safely used, in raising a structure of such necessarily large dimensions. At one of Lieutenant Thuillier's stations, in consequence of the employment of damp materials in the unburnt brick work, and constant and heavy falls of rain during the construction, the building gave way, under the weight of the instruments and observatory tent. Fortunately, the large Theodolite was packed in its case, and received no injury, but the season was too far advanced for the tower to be rebuilt before the setting in of the monsoon, and as the mishap occurred in the first polygon of the principal triangulation, and there were no more towers ready in advance, the out-turn of work, as measured by the area triangulated, is unusually small, though much valuable experience has been gained, and there is every reason to hope that there will be a full out-turn of work next season. The design of the tower stations will have to be altered to suit the climate

of Eastern Bengal; in lieu of the present solid mass of earthwork, it will be necessary to build a masonry wall around the central pillar, to support the observer's platform.

The Rahoon Meridional Series, under the superintendence of Mr. H. Keelan, First Assistant G. T. Survey, was brought to a termination during the last Field Season, by being extended southwards until it joined the Great Longitudinal Series of Triangles, connecting Calcutta and Karachi. The meridional distance triangulated is sixty-nine miles, by thirteen principal triangles, arranged in polygons, for mutual verification, and covering an area of 1,603 square miles.

This Series has taken six years to accomplish. It was commenced by Mr. Logan, late First Assistant G. T. Survey, but has been chiefly executed by Mr. Keelan. It is double throughout, the triangles being arranged in successive quadrilaterals and polygons of remarkable symmetry. Its meridional length is 457 miles; the principal and secondary triangles cover an area of 23,620 square miles. The computations and maps connected therewith will be completed by the 1st October, when the party will be transferred to the districts on the meridian of 84° , between Sumbulpoor and the East Coast. The total cost of the operations, up to 1st October, will be about Rupees 2,01,609, which gives a rate of Rupees 8-8-6, or about 17 shillings per square mile.

The field operations of the Gurlhagurh Series, on the meridian of Umritsur, were brought to a termination at the end of season 1861-62, when it formed a junction with the series of triangles on the same meridian which had been brought up by Captain Rivers as far as Ajmere, from the Great Longitudinal Series. By the 1st October, 1862, the recess computations and charts were completed, and the party was available for transfer elsewhere. This Series has taken five years to complete; the greater portion has been executed by Mr. George Shelverton. Its meridional length is 557 miles; the area covered by the principal and secondary triangles, 19,096 square miles; the cost, Rupees 1,08,212, which gives a rate of Rupees 5-10-8, or about 11 shillings per square mile.

The Sutlej Series follows the left bank of the Sutlej from its junction with the Indus, near Mithunkote, to a side of the Gurlhagurh Series near Ferozepoor. It was commenced towards the close of Field Season 1860-61 by Lieutenant Herschel, and was completed

past season by Mr. Shelverton. It is single throughout. The recess computations will be completed by 1st October, when the party will be transferred to the meridian of 80° , to execute the required triangulation between Jubbulpore and Madras. During the past Field Season the triangulation extended over a distance of 112 miles, covering an area of 1,366 square miles. A very creditable amount of secondary triangulation was also executed. The total cost of the Series, up to 1st October, the date of its completion, will be about Rupees 80,743; the total area covered by the triangulation is 8,142 square miles, thus giving a rate of Rupees 9-14-8, or nearly 20 shillings per mile.

The Bombay Party, under the superintendence of Captain Haig, Royal (Bombay) Engineers, having completed the triangulation in Northern Bombay, was deputed to execute a series of triangles to the south of the parallel of Bombay, on the meridian of Mangalore. While the preliminary operations and selection of stations were proceeding, Captain Haig marched to the origin of the Bombay Longitudinal Series, with a view to making this Series double throughout, by adding flank stations, so as to form polygons in parts where there were only single triangles. On reaching the ground, it was found that the ends of the Beder Base Line were, fortunately, in good preservation. Three of the advanced stations had, however, been completely destroyed. Captain Haig judiciously determined to triangulate the Series anew, as far west as the Mangalore meridian. The revision having been executed with a much superior instrument to that employed in the original triangulation, the value of this portion of the Bombay Longitudinal Series is very greatly enhanced.

Having completed this revision, Captain Haig was proceeding with the principal triangulation on the meridian of Mangalore, when an untoward accident brought his operations to an abrupt termination. The large Theodolite was set up for observation on the tower station of Palwan, when, without any previous warning, the tower gave way on one side, causing the fall of the instrument and observatory tent, whereby the instrument was so seriously injured that it is incapable of being again used, until it has been repaired by the makers in England. Fortunately, the horizontal circle, the most valuable portion, appears to have escaped injury, but the vertical circle was destroyed, and the injuries are such that the instrument cannot be repaired in this country. Captain Haig convened a Court of Enquiry to report

on the circumstances; the proceedings of the Court have already been submitted to Government. The Court came to the opinion, in which I entirely concur, that the fall of the tower was occasioned by the sudden and unexpected sinking of the ground below, and that no blame is attributable to Captain Haig, or any other person, for the mishap.

Captain Haig had already turned out a very excellent season's work, comprising thirty-two principal triangles, covering an area of 6,625 square miles, and extending over a length of 260 miles, whereof 66 appertain to the Mangalore meridian, and 194 to the parallel of Bombay.

The Spirit-Levelling Operations were carried on by Mr. Donnelly, Civil Second Assistant, under the superintendence of Lieutenant Thuillier. The party accompanied me to Calcutta, to receive the necessary instructions regarding the programme of the season's operations, which could not be decided on until I had obtained reliable information regarding the Railway levels between Calcutta and Agra. I had hoped to be able to incorporate these into our work, so as to avoid the labour and expense of carrying a line of levels all that distance. During the previous Field Season, a connection had been made, at Agra, with the Railway levels brought up from Calcutta, and the Trigonometrical Survey levels, brought up from the mean sea level at Karachi. The two sets of results differed by about twenty-four feet, and it was hoped that all difference would disappear, on connecting the Railway datum, the site of Howrah Dock, with the mean sea level of the Bay of Bengal.

That level had already been closely ascertained, by a Series of Tidal Observations taken at Kydd's Dock, and subsequently verified by others taken at Kejiri, from the description of which (*vide* foot-notes, next page,) it is evident that the mean sea level of the Bay of Bengal may be considered to be known to within a few inches of the truth. On connecting the Railway levels with Kydd's Dock, it was found that there still remained a difference of about twelve feet between the Railway and the Survey height of Agra. On discussing this subject with the Chief Engineer of the Railway, I ascertained that there were several breaks in the Railway levels, that, in consequence of the pressure of other work, there had been no opportunity of preparing a correct and true section of the whole line, and that it was contemplat-

ed to re-level the line, as soon as the Engineers had leisure to do so. I decided, therefore, on deputing the Levelling Party to re-level the line of the Railway, and connect all the Trigonometrical Stations within reach thereof.

Mr. Donnelly made good progress, and accomplished two hundred and forty-two miles of first-class levelling,* forty-one of which had to

* With an Assistant levelling the line, independently, behind him, station by station, after the method described in the published volume of *Tables of Heights*.

The following description of the connection of Kydd's Dock with the mean sea level of the Bay of Bengal is taken from a Report, dated 1st November, 1854, on the Calcutta Meridional Series, by Colonel Waugh, Surveyor-General, and Superintendent G. T. S. :—

"A Register of the Tides in the River Hoogly is regularly kept at Kydd's Dockyard, near Calcutta, the height of each successive tide being referred to a fixed datum line or zero, which is the bottom or sill stone of the dock, and therefore, an object of invariable character.

"A transcript of the Register of the Tides for two years viz.,—from May, 1846, to April, 1848, having been obtained from the Marine Department, a Monthly Abstract of Mean Tides was deduced therefrom.

"The waters of the ocean would maintain a constant level if undisturbed by the action of the Sun and Moon. La Place has demonstrated that this level is a mean between the highest and lowest state to which the surface of the ocean is reduced by the attraction of those bodies. This mathematical truth is corroborated by observations made on open coasts, from which it results that the mean of high and low water for two consecutive tides represents, very nearly, the level of the sea, and that the average for a lunation is constant within a very small quantity.—*Vide* Professor Whewell's Report, 7 vol., British Association's Report.

"An examination of the Abstract of Monthly Mean Tides will, however, show that considerable irregularity exists in the River Hoogly, the monthly means differing as much as six and a-half feet. Now, if the annual average be considered as the true level of the sea, it would follow that for some months, consecutively, the mean height of the River is two and a-half feet below the sea level, a conclusion which is altogether inadmissible.

"The lowest monthly mean tide occurs about February and March, when the fresh water in the river is lowest, and strong Southerly winds do not prevail. The mean tide rises gradually, as the river rises during the South Monsoon until it attains its maximum in September or October, at which time the monthly mean exceeds that of February by no less than six feet. This rise is, obviously, the effect of accumulation, produced by inundation in the valley of the Ganges, and the force of the South-West wind, which dams up the freshes in the long and narrow channel of the river.

"It has been remarked by Colonel Cheape, Chief Engineer, in his Memoirs, dated April, 1825, that the surface of the Salt Water Lake, wherein the rise of the tide is almost imperceptible, would, on account of its wide expanse, represent very accurately the level of the sea with which it communicates. He also observes that Captain Taylor's levels indicate that the surface of the lake in the dry season, is 2f. 4.3ins. below the mean state of the river. This result corresponds very nearly with the mean tide of the river itself, which in February is 2f. 5ins. below the level of the annual mean.

"Colonel Cheape further states that the periodic rise of the surface of the lake in the wet season is ten inches. Now, the contemporaneous rise in the mean tide of the river has been shown to be six feet, and as the cause of these elevations is precisely the same, though the effects are in the ratio of seven to

be re-levelled, on account of large discrepancies which were found in the Railway levels. The operations had reached the vicinity of Bha-

one, the greater rise in the river can clearly be attributed only to the narrowness of its channel compared with the bay; it is probable that a considerable portion of the rise of ten inches in the surface of the lake is also due to accumulation; so that, although a rise may be supposed to take place in the level of the sea at the head of the bay, during the continued pressure of the S. W. Monsoon, still, that elevation must be much less than what takes place in the lake, where the effect of this rise is increased by the narrowness of the channel, and the influx of fresh water during the inundation.

"It has been shown that if the annual average of mean water be taken as the sea level, it would lead to the inadmissible conclusion that, in the dry season, the average level of the river at Calcutta is twenty-nine inches below the sea, with which it freely communicates. It has also been shewn that the surface of the Great Salt Water Lake, in the dry season, is on a level, or nearly so, with the mean tide of the river at the same time. It is likewise manifest that the periodic rise of mean tide during the monsoon, to the extent of six feet in the river and ten inches in the lake is occasioned by local causes, independent altogether of the true level of the sea, which is a constant level, and these causes, it appears, operating in narrow channels, are capable of producing exaggerated results in the proportion of seven to one, showing clearly the fact of accumulation. Hence the conclusion is inevitable, that the lowest monthly mean tide of the river, observed in February and March, represents the nearest approximation to the actual sea level, and that the rise of mean tide at Calcutta during other months, may fairly be ascribed to disturbing causes of an inland character, altogether independent of the true and constant level of the ocean. The variable character of the disturbing causes is shewn by the fact that the monthly means of corresponding months for the two years differ considerably, except in the months of February and March, the monthly mean tides of which are very accordant.

"Proceeding upon this principle, I have used the following observations to refer the datum line in Kydd's Dock to the sea level:—

" Mean Tide February, 1847, above datum, as measured on Guage, ...	8.11 feet.
" March, " " " " " " " " " "	8.45 "
" February, 1848, " " " " " " " " " "	8.48 "
" March, " " " " " " " " " "	8.50 "
" February, 1850, " " " " " " " " " "	8.28 "
" March, " " " " " " " " " "	8.62 "
" February, 1851, " " " " " " " " " "	7.94 "
" March, " " " " " " " " " "	8.36 "

Mean, ... 8.343 feet.

"Correction for Error of Graduation on Guage by Mr. Bedford's Measurements, ... 0.233 feet.

"By Tides measured at Calcutta in February and March, Mean Sea Level above datum, ... 8.576 feet.

"Again, in the years 1850 and 1851, Mr. Bedford, the Marine Surveyor, took a series of tidal observations at Kejiri, and connecting this point by a series of levels with Kydd's Dock, found that the datum line at the latter point is 9.07 feet below the sea level. Mr. Bedford's observations from which this result is derived, are as follows:—

	feet. inches.
" Mean Height of Sea Level above the datum line at Kejiri, ...	8 9.75
" Datum Line at Kejiri above that of Kydd's Guage, ...	0 2.89
" Sea Level above the datum line of Kydd's Guage, ...	9 0.63

"Which reduced to decimals of a foot becomes, ... 9.053

gulpore, when Mr. Donnelly was compelled, by severe illness, to close work.

Mean Levels of the River's mouth at Kejiri, at Neap Tides, for the years 1850 and 1851, excluding the South-West Monsoon.

MONTHS.	Highest Low Water.		Lowest High Water.		MEAN.	
	Feet.	Ins.	Feet.	Ins.	Feet.	Ins.
1850.						
January,	5	0	11	9	8	4½
	4	0	11	9	7	10½
February,	5	6	11	0	8	3
	4	9	11	6	8	1½
March,	6	0	11	0	8	0
	4	9	12	0	8	4½
April,	6	9	11	0	8	10½
	4	9	12	6	8	7½
May,	6	9	12	0	9	4½
	5	3	13	0	9	1½
June,	6	6	13	3	9	10½
	6	0	14	9	10	4½
November,	7	0	12	3	9	7½
	4	9	13	0	8	10½
December,	5	9	11	9	8	9
	4	6	12	3	9	4½
1851.						
January,	4	6	11	9	8	1½
	4	3	11	0	7	7½
February,	4	3	11	3	7	9
	5	0	10	3	7	7½
March,	4	9	11	0	7	10½
	6	3	11	9	9	0
April,	5	3	12	9	9	0
	7	0	10	6	8	9
May,	5	6	12	9	9	1½
	7	0	12	6	9	9
June,	6	0	14	6	10	3
	6	9	13	3	10	0

During the year under review, I was called upon to collect all the available data of levels, existing in the Public Works, Railway, and

"Which differs from my determination by half a foot; but, if the tides at Kejiri for February and March be alone taken into account, at which period the inland waters flowing seaward are lowest, the result would agree with that derived from my discussion of the tides at Calcutta to about one inch."

Survey Offices, all over India, in order to reduce them to a common datum. As a first step towards this desirable measure, I have published a volume of Tables of Levels, based on the Spirit-Levelling Operations of this Survey, and reduced to the mean sea level of Karachi Harbour, as their datum. Additional volumes will be published as soon as possible. They will enable officers of the Public Works and Railway Departments to reduce their levels to the mean sea, by connecting them with the nearest Bench Mark, or Station, of the Trigonometrical Survey. In most instances, however, the business of connecting will probably devolve on the Survey Department. At present, we have only one Levelling Party, which is employed in Bengal; I therefore submitted a project for the formation of other parties to carry on operations, simultaneously, in the Madras and Bombay Presidencies, as the only means of speedily accomplishing an operation, of which the practical value will be greatly enhanced by early completion. Unfortunately, financial reasons have interfered to prevent this proposal from being sanctioned.

I now proceed to report on the Astronomical Observations for the determination of the Latitude and Longitude of the Andaman Islands, which were instituted on a representation by the Superintendent of Port Blair, that the erroneous positions assigned to some of these Islands, in the published Charts, endangered the safety of ships sailing between Calcutta and Singapore. Under the orders of Government, in the Home Department, the Surveyor General had deputed a Surveyor, Mr. Nicolson, to conduct the necessary observations, the superintendence of which was subsequently transferred to the Trigonometrical branch of the Survey.

Mr. Nicolson started from Calcutta early in December, 1861, to reconnoitre the Coco and Andaman Islands. He found that, in order to take a complete Series of Astronomical Observations at the Great Coco, it would be necessary to have a steamer placed at his disposal for some weeks, to keep up his communication with Port Blair, and bring the necessary supplies for his party.

About this time, a communication was received from the Bombay Government, representing that there was as much doubt about the accuracy of the position of Port Blair, as of that of the Coco Islands. Under these circumstances, it seemed advisable that Mr. Nicolson should begin operations by fixing Port Blair, in order that the proposed

operations might be commenced at the place where the greatest facilities for their execution existed.

The inaccuracy of the present Charts of the islands lying between Sumatra and Burma being admitted on all sides, it appeared necessary, in the absence of any regular survey of those islands, to fix, by astronomical observations, the positions of Acheen Head, Port Blair, the Great Coco, or the Preparis Island, and an island in each of the other groups, intermediate between Acheen Head and Cape Negrais. It is believed that the relative positions of the mutually visible islands of each group are already correctly shown on the Charts; consequently, by determining the absolute position of a point in each group, it would be possible to rectify the existing Charts, without making a general re-survey.

Mr. Nicolson, having completed his reconnoissance, returned to Calcutta in February, 1862, by which time one of the large 3-foot astronomical circles of the Trigonometrical Survey had been got ready, and a portable observatory, with rotating dome, constructed for the observations. There was no good astronomical telescope available in the stores of the Mathematical Instrument Department; consequently, Mr. Nicolson was directed to take all his observations, whether of occultations, eclipses, or moon culminations, with the telescope of the astronomical circle, which he could point to any part of the sky, through the aperture in the rotating dome of the observatory. Owing, however, to the small number of occultations and culminations which occur monthly, and the risk of losing some of them in cloudy weather, Mr. Nicolson was directed to base his observations for Longitude chiefly on the measurement of lunar zenith distances, for which the astronomical circle is well adapted. He was supplied with an astronomical clock, and all other necessary instruments, from the Calcutta Observatory.

In May, 1862, Mr. Nicolson had set up his observatory at Port Blair, and was ready to commence observations. Unfortunately, the season of fine weather had then nearly terminated; the Monsoon set in with unusual severity, nights favourable for observing were few and far between, and, consequently, several months elapsed before the whole of the necessary observations for Latitude and Longitude were completed. The work was further impeded by the delays attendant on postal communication between Calcutta and Port Blair, making it very

difficult for me to exercise that degree of supervision over the operations, which their delicate and difficult nature required.

By the end of 1862, Mr. Nicolson reported that he had taken a sufficient number of observations to fix the position of Port Blair; he, therefore, applied for a vessel to be placed at his disposal to enable him to proceed to fix the positions of the Great Coco, and other islands. Owing to postal and other delays, it was not until the end of February, 1863, on my return from Vizagapatam, that I learnt from the Marine Department that no vessel was available, nor could one be got ready before the fine weather season would have terminated.

From the same communication I also learnt that the Secretary of State for India had ordered a complete Maritime Survey of the Andaman Islands to be executed. Being then in Calcutta, I went to Captain Rennie, the Secretary to Government of India, Marine Department, and was informed that, under instructions from the Admiralty Hydrographer, it had been determined to find the differences of Longitude between the various groups of islands, chronometrically, by a battery of thirteen or fourteen chronometers.

The circumstances under which it was originally proposed to fix a series of positions by astronomical observations had thus entirely altered. The complete Maritime Survey, which has been ordered by the Right Hon. the Secretary of State for India, renders further astronomical observations unnecessary. The determinations of differences of Longitude, which are the only really difficult portion of the work, can be done chronometrically by the Marine Surveyors, with much greater rapidity and economy, and, probably, even with greater accuracy, than by the best astronomical observations for absolute Longitude.

Consequently, in March last I desired Mr. Nicolson to restrict his operations to taking as many more observations for the determination of the Longitude of Port Blair as could be obtained before the setting in of the monsoon, and then to return to Calcutta. He reached the Presidency in June, and has ever since been employed in reducing his observations. They consist of 32 lunar culminations, 136 lunar zenith distances, 130 transits of clock stars, and 162 meridional zenith distances of stars for Latitude, observed up to the 12th March, when the astronomical clock met with an accident, and Mr. Nicolson was afterwards obliged to employ a chronometer. His subsequent observ-

ations are, consequently, not as valuable as the earlier ones; they consist of 9 culminations, 64 lunar zenith distances, and 36 clock stars. The whole of the Latitude observations have been reduced, and found exceedingly satisfactory. There has not yet been leisure to reduce more than a few of the observations for Longitude, but the results obtained hitherto are satisfactory. The final resulting Longitude will be communicated for publication in the *Calcutta Gazette* as soon as ascertained. It should serve as an excellent datum for the proposed Maritime Surveys, and save the expense of a series of voyages between Madras and Port Blair, which would otherwise have to be incurred to obtain a good chronometric determination of the Longitude of Port Blair.

[A tabular abstract statement of the field-work executed by each party during the official year 1862-3 is given on the next page.]

The Computing Officer has been employed in a variety of preliminary operations, which are necessary to form the basis of a general reduction of the whole of the principal triangulation of this Survey, which will shortly become necessary, now that almost the whole of the triangulation of the tracts of country comprised in the great quadrilateral figure connecting Calcutta, Karachi, Attok, and Purnea, is completed. Though the triangulation has been executed with the very best instruments, and though the system of observation which was introduced into this Department by Colonel Everest, is more rigorous and accurate than that of any European Survey, it is evident that, in consequence of the vast length of each Series, and the imperfections which necessarily attend whatever is the work of human hands, each Series generates a certain amount of error, which becomes apparent as linear error, on the termination of the Series on a measured base line, while on the close of a circuit formed by two Meridional Series, and the portions of the connecting Longitudinal Series at their extremities, it produces errors of Latitude, Longitude, and Azimuth. The dispersion of these errors in such a manner as to obtain the most probable results of the whole, giving its due weight to each fact of observation, and taking into consideration the bearing of every such fact on all the rest, is a matter of great intricacy and difficulty, on which it will be necessary for me to consult with the ablest mathematicians of the present day in Europe, before deciding on the system to be finally adopted. Meanwhile, the necessary preliminaries

for the eventual calculations are being carefully elaborated by Lieutenant Herschel, to whom I am indebted for numerous very valuable suggestions, and for co-operation as cordial as it has been unintermittent.

While the practical operations of this department may be confidently pronounced to be of a superior order to similar operations in any other part of the globe, it must, on the other hand, be admitted, that the theoretical applications, for the reduction of the triangulation, have not kept pace with recent improvements in geodetical science, which have been introduced into some European Surveys. The method which has hitherto been employed for reducing the observed angles, so as to satisfy all the equations of condition of each figure, though a great improvement on any previous method, has had, in its turn, to give way to the subsequently discovered method of minimum squares. The algebraical solution of the equations necessary to satisfy the condition that the sum of the squares of the errors shall be a minimum, is by no means difficult, but hitherto there has been no practical adaptation of it in this Survey, chiefly owing to the pressure of other and more urgent business, on those alone capable of dealing with the subject. Much progress has, however, been recently made in this direction, and I am indebted to Lieutenant Herschel for devising methods of calculation, which will enable the reduction of our figures to be effected, according to the new and rigorous system, by native computers possessing little more than a knowledge of arithmetic, with even greater facility than the less refined methods of reduction, which have hitherto been employed.

The drawing office has been chiefly employed in compiling maps of the dominions subject to the Maharajah of Kashmir, from the plane table sheets sent in by Captain Montgomerie. A new Chart of the Triangulation of this Survey, up to date, has also been prepared, and a Chart to illustrate the volume of Tables of Heights recently published; both these Charts were lithographed in the office of the Surveyor General, Calcutta. Nine original preliminary Charts of the triangulation, in various parts of India, have been prepared, in duplicate, for the use of the Surveyor General's Office, and the Geographer to the Right Hon. the Secretary of State for India. The Photographic apparatus is also being usefully employed in copying and reducing maps, and in furnishing preliminary copies for current use, until the

originals are engraved and published. Owing, however, to the small establishments at my disposal, the photography is necessarily restricted to the short period of the recess of the Kashmir Party, three to four months, when the services of our best photographer, Captain Melville, are available for their management.

In the Instrumental Department, great advantages may be expected by the appointment recently made by the Right Hon. the Secretary of State for India, of an officer, Colonel Strange, to superintend the construction of the new great Theodolite, and various astronomical instruments, which are being prepared in England for this department. When they are received in India, we shall be in a position to undertake the necessary operations for ascertaining our Longitudes, in connection with the Observatory at Greenwich, by means of the Electric Telegraph, which is now brought across from the Mediterranean to India.

On the Antiquities of Guzerat.—By Captain H. MACKENZIE.

(Communicated by the Punjab Auxiliary Committee of the Asiatic Society.)

[Received 16th February, 1864.]

Guzerat City and Fort.—There are few antiquities in this district and of these few, little is known. Guzerat itself is considered to be of great antiquity: a town had existed here in former ages. I have not heard of any antique coins having been found in Guzerat itself, by which any perfectly trustworthy dates might be fixed, but there seems no reason to doubt that it was a place of some importance prior to Greek invasion. A Hindoo Raja named Raja Buchanpal, a Soorujbunsee, who emigrated from the lower Gangetic Doab to the Punjab, is said to have first built a city here, and called it Oodanuggree, the Everlasting or Sweet Smelling City. It is not known when this city ceased to exist, but it is recorded that in Sumbut 175 or 1740 years ago, Ranee Guzran, wife of Raja Budr Sain, (son of Raja Risaloo of Sealkote) rebuilt the city, and called it Guzran Nuggree. This too passed away. In Sumbut 1350, Sultan Mahmud Guzniwalla laid it waste, and it seems to have remained so until 285 years afterwards, when the Emperor Akbur Shah chose the ancient mound as the site for a stronghold.

The year 996 Hijree, A. D. 1580, is fixed upon as the date of its erection. It seems not improbable that the Emperor Shere Shah may have had a hand in it at an early period ; for, after building the fortress of Rhotas, he is reported to have taken much pains to settle this part of the country, so long disturbed by the contumacy of the Ghukkers. In those days there was no stronghold in the Ghuj Doab to mark the Imperial power, and it was the high road between Dehli and Cabul. Thus the position as well as the features of the locality were favourable. The Emperor therefore decided to build a fortress on the present site of Guzerat. The story goes on to say that according to the old Asiatic principle "*Minuk az Sirkar*," "*Arud az Bazar*," the Emperor proposed that the inhabitants of the country should bear half the expense. But the Jats, in whose section of the Doab it was situated, objected, and the Emperor was obliged to turn for assistance to the Goojurs who inhabited the neighbouring country to the west. The sum required was one lakh and a quarter, but the idea of having a Goojur Fort in the country of the Jats was so tempting, that the Goojurs agreed to raise the money. Fatty Mahomed Chondra of Varaichanwalla, a village near Dingah, took the lead in the matter, but the cash was advanced by Adum, a wealthy Goojur of Dingah. This man, however, was so *unlettered* that he could only give the cash by measure, and he accordingly meted it out in a *Tossa* measure. His descendants are known to this day, as the Tossa division of Goojurs and the names of the villages they own and inhabit, all have the prefix of Tossa, thus Tossa Oosman, Tossa Adum, &c. &c.

The fort was thus built with the assistance of the Goojurs and called conjointly after them and the Emperor "Goojerat Akberabad." This so vexed the Jats that they soon after sent a deputation to the Emperor at Dehli, and tried to induce him to change the name. But the Emperor refused to do so, and only consented to mark off their country as a separate Turuf with any name the Jats might choose to give it. They chose the name of Herat, from the Persian province of that name being their real or supposed place of origin. The upper part of the Doab was therefore henceforth divided into the two Turufs ; Herat of the Jats and Goojerat of the Goojurs, either of which will be found specified in almost all old documents concerning lands and the rights thereto.

The fort of those days is now hardly traceable, for it was renewed on a large scale in the early days of Sikh rule, by Sirdar Goojur Singh. The usual Imperial adjuncts, however, of a Baolee, Musjid and Hummaam, or at least the first and last, still exist and are in use at the present time. The fort is now much hemmed in by houses and streets. Its walls are 20 to 35 feet in height; it has only two entrances, and would still prove a considerable defence against an unscientific enemy.

The place grew in importance as time went on, but chiefly during the reign of the Emperor Shah Jehan. It then happened that a Pír of great virtue and sanctity, named Shah Dowla, took up his residence here. As the offerings made to him were large, so was his expenditure lavish, and a good deal was laid out on the improvement of the town and suburbs. There are yet to be seen the remains of a viaduct built of brick arches, and which seem to have extended from the north to the north east of the city, but whose use is not very apparent.

Hailan.—There are some extensive, and as reputed, very old ruins at Hailan, but nothing is known to determine their former history with any exactness. Some coins have been picked up among the ruins bearing the date of the 8th century Hijree, but nothing earlier than the Mahomedan times has been discovered. There is a large tomb still in very good order. Slabs are let into the walls bearing inscriptions. It appears to be the Tomb of Mirza Shaik Ullee Beg, an Ameer of the Emperor Akbur, who was killed in an encounter with the Ghukkurs; it is dated 999 Hijree. He founded a village close to Hailan, still called after him, Shaikh Ulleepoor, and possessed by his Mogul descendants.

Patu Kothee.—This is a very old ruin situated on the banks of the Jaba Nullah, at the foot of the Pubbee in Zail *Kurriahe*. The natives can give no information of its origin or use. It is of no great extent, but is reputed to be part of an old, perhaps buried city; the bricks are of a large model, one foot square and three inches thick, such as are never found in buildings posterior to Mahomedan rule, and very finely burnt; unfortunately no researches hitherto have succeeded in finding inscriptions of any kind. The bricks have often a mark in them as if described with the finger round the thumb as a pivot.

Russool.—Russool presents some vestiges of antiquity. An old mosque here contained an inscription commemorating its erection. The date was read as 1000 Hijree or thereabouts. It was placed in the Crystal Palace by Mr. Edward Clive Bayley.

Islamghur.—Islamghur is on a very high and imposing mound, which must be very ancient. It is said to have been the head quarters of the large chourassee of villages belonging to the Varaich Jats; in later times it was converted into a stronghold. The chief Chowdrees of the Varaiches have their residence and possessions in Jelalpoor to which Islamghur is close, but the latter is situated within the limits of the adjacent village of Koolachour.

Moong.—Moong is a very old place, it is very prolific in coins of later Indo-Greek kings, Azas, and the great (nameless) saviour king of kings, particularly small copper coins.

Khawaspore Serai.—The route to Cabul through the district has still the remains of the Serais and Baolees erected by the Mahomedan Emperors. The Serai at Khawaspoor was built by Suku Khawas Khan in the year 952 Hijree. Khawas Khan was a man of power in the service of the Emperors Shere Shah and his son Selim Shah. His mother was a slave girl in the former Emperor's seraglio, and he himself was married by the Emperor to the daughter of a Ghukkur chief, and deputed to govern this part of the empire. He immortalized his later master by converting the Bhutiaras of the Serai, and dubbing them Suleem Shahees or Islamshahees, which appellation the Maachus of the village and its neighbourhood give to their caste to the present day.

At Kharian there are two very large Baolees. Both are said to have been built at the same time, and their very different appearances now, are accounted for by the western one having been very thoroughly repaired by Sirdar Lena Singh. The eastern Baolee is in its original state, built of stones now very much worn; over the top of the steps is a massive dome with an inscription. It simply records the completion of the work in the month of Ramzan 1013 Hijree, in the reign of Akbar, who ordered it to be built by Jutyoolah son of Hajee Habeeboollah, and that it cost 11,000 Akburee Rupees, and it concludes with a prayer that the maker's sins be forgiven. Kharian bears the prefix of a Serai, but it does not appear that a Serai was ever

built here. It was a staging-place and the Baolees were provided but no Serai.

Serai Alumgeer.—The Serai at Nourungabad was built by the Emperor Aurungzebe, who gave his title of Alumgeer to it. It is improperly called the Serai of Nourungabad which is a village half a mile distant, and altogether out of the Alumgeer lands, which were granted to certain Khutrees to preserve the Serai. But during the Sikh rule there was a cantonment at Nourungabad which properly accounts for the Serai becoming known by that name also.

Chowkundee and Alumgheer.—Besides the above there are no relics of the Imperial sway, except the ruins of a hunting residence near Alumgheer in the upper part of the district. The ruined edifice still goes by the old Sanscrit derived name of Chowkundee. It was built by the Emperor Akbur Shah, in the 34th year of his reign, and was the first halting-place after crossing the Chenab, in the royal progresses from Dehli to Cashmere.

These Serais have long ceased to serve their purposes. After the decay of the empire, their utility was no longer appreciated: the materials were, to a large extent, appropriated to other purposes, and now the walls or their foundations only can be traced through the mass of plebeian habitations which cover their sites, but their remains attest their substantial construction and are still monuments of a large-handed wisdom and public beneficence, which found no imitators in the Sikh or Duranee governments which succeeded.

*Memorandum on the Question of British Trade with Western China
viâ Burmah.*—By Dr. C. WILLIAMS.

[Received 24th June, 1864.] [Read 7th September, 1864.]

The subject appears to naturally divide itself into the consideration of several sets of circumstances that may be conveniently classified under the following heads :

1st. The political state of the several countries between the Bay of Bengal and Central China ;

2nd. The Physical Geography of the district proposed to be traversed by the various lines of communication ;

3rd. Their commercial condition and capabilities including population, products, former and existing trade, &c. ;

4th. The conclusion from consideration of the above three subjects, as to which is the most desirable and practicable route.

I.—POLITICAL.

Pegu, Martaban and Tenasserim, with their rivers and ports, being permanent portions of British territory, and all therefore but insuperable physical obstacles, being under the direct control of the British authorities, it is needless to consider their political condition.

The state of the political relations of Burmah Proper with the British Government of India, up to the end of 1862, has, I believe, had much to do with the direction which public attention has taken in looking for the desired opening of Western China.

Up to that time, the Burmese Government, unwilling to acknowledge in any way the stubborn fact of the province of Pegu being British territory, had obstinately rejected the repeated overtures of the Indian Government to the settlement of a permanent peace, and had in fact behaved towards that Government in a spirit of passive hostility.

At the time of first turning my thoughts to a career in Burmah, and especially in Upper Burmah, one of the prospects most distinctly in my view, was that of the old route to China by the Irrawaddy being re-opened and made available to British commerce, by an alteration of the then existing feelings and intentions of the Burman Government towards the British. This is not the place to enter into a history of the changes gradually produced in the minds of the chief authorities of Burmah Proper. Suffice it to note that the political

position, as bearing on this question, is now totally different from what it was during the decade succeeding the last Burman war. The Envoy of the Viceroy and Governor-General has negotiated a treaty, wherein the British and Burmese Governments are declared friends, and trade in and through Upper Burmah is freely thrown open to British mercantile enterprise. Arrangements are there made by which our direct trade with China may be carried on through Upper Burmah without any harassing restrictions, and subject only to a transit due of 1 per cent. ad valorem, on Chinese exports, and nil on imports. A British agent resides at the Burmese court, acknowledged and conferred with by the Burmese Government, under the title in their own language of "Agent to the English minister,"—the Burmese translation of Chief Commissioner referring to his political capacity of agent to the Governor-General, being "Ayebamg Woongyee," a term only applied among themselves to the minister who has the conduct of political affairs, which minister is invariably the chief Woongyee or Vizier,—whose functions are precisely those of a Consul and Chargé d'affaires, taking his instructions from the Chief Commissioner of British Burmah.

No one acquainted with the history of the former relations between the Burmese and British Governments, can fail to see in this, the proof that there has taken place within the last three years, a substantial revolution in the political position of Upper Burmah, and that in looking for routes into Western China, that country must be now regarded in a light not only different from what was formerly the true one, but almost the very opposite. There is no longer a hostile Government shutting up its territory and excluding British trade. The Burman Government is now a friendly one, *inviting* British trade, and not only willing to open to it the high way to China, but fully alive to the advantages that commerce through its territory would confer both on the monarch and the people.

Burmah Proper is no longer a barrier, but a gangway, open to the use of whoever will avail themselves of it.

To the East and North-East of the frontier of British Burmah, hanging about, so to speak, the lower and middle Salween, are several tribes of various Karen races, some of them acknowledging British, others Burman Suzerainty, and others not only really, but nominally quite independent.

Their character is as wild as the mountains they inhabit. The converts to Christianity, extraordinary as has been the success of Dr. and Mrs. Mason among these tribes, are as yet, comparatively too few to alter the general character of the Karen chiefs and people.

4. Passing over the Salween valley, and approaching the northern portions of the Cambodia, there are found Shan States tributary to Burmah, and acknowledging their vassalage, with, in reality, the inverse ratio of their distance from the Burmese capital. To the west of these Shan States are others whose comparative proximity to the Irrawaddy makes them more substantially submissive to the Burmese Government. The Salween may be said to be the line westwards of which the sovereignty is real, while eastwards it is merely nominal. The Tsaubwas, or hereditary rulers of these various states, are independent of each other, and it is this fact with the frequent strifes between them, and even between the several members of one Tsaubwa's family, that explains the success of the Burman policy in regard to them, which is simply "divide et impera."

Crossing the Cambodia, other Shan States are met with, tributary to China, and finally the north boundary of Siamese territory, the west of Annam, and the southern limits of China Proper, are separated by Shans whose allegiance to either of these three Powers, is very ill-defined.

The most important matter, perhaps, for consideration in this division, is the position of the part of China we desire to reach, viz. Yunan and Sechuen.

Unfortunately the province of Yunan has for some eight years past been the scene of a fierce struggle between the orthodox Chinese and Tartar officials on the one hand, and the Mohammedan insurgents on the other. To quote my letters dated from Bamo in 1863—"The Mussulman Chinese, or '*Pansees*,' as they are called, seem to have first suffered what they deemed oppression and persecution. The fierce tenets of their faith soon led them to resistance, and being but a handful in the midst of their Buddhist fellow-subjects, they had to fly *en masse* to the jungles and hills, whence they commenced a dacoity-war on the Chinese towns and villages. The Mussulmans were bound together by their common peril, and afforded another instance of the strengthening influence of a vigorous religious belief, by the success they everywhere met with in combating their numerous, but

enervated enemies. These successes soon attracted to their side a crowd of the innumerable class who had nothing to lose, and were anxious to gain. To these the Pansees gave ample encouragement by abandoning to pillage every conquered town. Not numbering among themselves more than 20,000 fighting men, they have now at their command, armies amounting to between two and three hundred thousand, of Chinese, Shans, and people of the wild hill tribes, Kahkyens, etc. The war has become a struggle that has devastated the country, destroyed commerce, and rendered life and property utterly insecure. The captured cities were dealt with in truly oriental style, of which particulars are needless. The conquerors seem to have restrained themselves from debauchery in order the better to handle the hordes of villains at their command. The Peking authorities, it is well known, have had enough on their hands elsewhere, and seem to have made no efforts to support the local government. In Western Yunan, at least, this has been, in consequence, completely upset, and the Pansees have formed a regular government of their own to replace it. The seat of this new Mussulman power is at *Tali*, the second city of the province. In that city now resides the Pansee king. The system of government is, as yet, purely military, the country being under the roughest kind of martial law. The king is called *Tuwinseu*; his chief officer, *Sophutyangin*, has the management of affairs at Momien, a large Chinese town close to the Shan States, west of Yunan; and another commander, Tawsuntutu, is stationed at Yunzehan. Many of the highest commands are given to Chinese and Shans who have committed themselves to their side!*

From conversations at Bammó and Mandelay, with various persons more or less the accredited agents of the Pansee government, I am also convinced that it is the earnest desire of that government to re-open the trade with Burmah. Through these same agents the Pansee authorities will have also been enlightened as to the purely commercial views, the British authorities have in regard to their territories, and the solid advantages that will accrue to them if they facilitate the opening of the routes and afford due protection to the Chinese traders.

* From information I have procured during the past year, I cannot but think that this Pansee ascendancy in Western Yunan is for the present, or until the Emperor of China can spare an overwhelming force to destroy it, firmly established.

The Province of Sechuen not less important to us than Yunan, is, as far as I am aware, unaffected either by the Taiping or the Pansee rebellion.

To the West of Yunan Proper is a small cluster of Shan towns under their several hereditary chiefs or Tsaubwas, commonly called the Shan *Shipyee* or eight Shan States. They are, beginning at the North, Maintee, Sanda, Mainla, Hossa, Lassa, Mowun, Maingmo and Kaingma. These formerly belonged to the Burman Empire, but were lost in the time of Shingpyn Shing, about 1769. On the Pansee rebellion breaking out, the insurgents did not find it difficult to obtain partizans among the disputants, invariably in the families of the hereditary Shan Tsaubwas. By such influence they contrived to get a peaceable submission to their sovereignty in place of the Chinese; and many of the Shan chiefs are in their service, the Nantia Tsaubwa, for instance, who is a Pansee officer under the name of *Taututu*, and the Lookhyang Tsaubwa *Siyintutu*. The temptation to oppression was, however, too strong, and several of the Shan towns, unable to put up with the penalties of Mussulman domination, have again thrown off their allegiance to their new masters and assisted the Chinese commanders still holding out against the Pansee. At Bammó I often conversed with inhabitants of these Shan districts and gathered from what they told me that any settlement would be welcome to them that would save them from being a prey to two enemies at once.

Not unnaturally the Burmese government has been led to think of resuming its former position in reference to these Shan States, important for their teeming population, rich lands, and situation, and I am informed on the highest authority, that some of the Shan towns have invited the king of Burmah to take them into his dominions and under his protection. As "*quieta non movere*" is, however, a maxim now in much force in Burman policy, it is not probable Burman dominions will grow in that direction. Were these Provinces, however, to become Burman territory, the political obstacles to communication would be very much diminished, not only by so much more of the route being under friendly Burman rule, but by the Kakhyen tribes on the hills, being then pinched in between Burman authority on both sides, and thus more easily compelled to respect the lives and property of travellers, and cease their mischievous hindrances to trade across their mountains.

The Kakhyens above alluded to are a portion of the vast horde of Singphos that inhabit the mountainous districts of Northern Assam, and stretch round the North of Burmah into Western China. These extend not only all along the Northern frontiers, but dip down Southward wherever the mountain ranges lead them, even to half way between Bammó and the capital. They have ousted many Shan tribes, particularly "Paloungs," from the hill districts, and wherever they appear, they assume the same character of lords of all they can reach, and are only to be appeased by some form of black mail. In proportion as their locations are within reach of Burman troops, the chiefs acknowledge themselves vassals of the Burmese king. How strong the tie was even in vigorous Tharrawaddy's time, may be judged of from an anecdote. One of the chiefs of the hills north of Shoaygoo was honoured with special dignity by that king whose golden foot he had worshipped at the capital itself; but having some few years afterwards incurred the displeasure of the Burman ministers, they ordered the local governor to call him, take away his chieftainship and give it to another. The chief came to Shoaygoo, but on hearing why he had been sent for, spat on the ground, saying: "When I take that spittle again into my mouth, the king may take back the rank he gave me," and returned to his hills and to his Tsaubwaship, ruling with increased, rather than diminished prestige.

The tie is at present still more slender. The Kakhyens, as the Burmese call these "Singphos" levy black mail even to within six miles of Bammó, the seat of a Burman governor of the rank of a Woongyee. They inspire such terror, that in the neighbouring plains, no Burman nor Shan will venture alone, or even in company, unarmed along the roads within their reach.

The communities I have now to remark on, inhabiting the range of hills between the Bammó and Momeit valley, and the plains and valleys of the eight Shan States, are identical in race and language with the Singphos of Assam. They belong to various tribes; they obey no common authority, but are divided into numerous little clans, each with its own chief, and each perfectly independent of the others. Some of these chiefs rule a country of a thousand families, others but a few score. They are frequently at feud with one another, and are habitually ready for strife. Their people invariably carry arms, and have among them great numbers of matchlocks of Chinese and their own manufacture.

9. The Burmese frontier is still officially supposed to be on the east side of these Kakhyen hills, and but a few years ago, there were Burmese and Chinese stockades on the western and eastern sides of a little stream, the Lucyline, that marked the limit between the respective territories. Although this outpost has been withdrawn, and the Burmese, now, have no troops further East than Bammó, the Kakhyen chiefs still acknowledge in theory the Burmese Suzerainty, those near Bammó coming into the town at the call of the Governor, and, to a certain extent, obeying his orders.

The Shan villagers along the Taping creek assured me that fifty years ago, there were scarcely any Kakhyens in those hills, but peaceful Paloungs, who have been gradually displaced by them. Signs of former population and extensive culture obtrude themselves upon the attention of the traveller, and corroborate the native assertion that the Kakhyen nuisance is one of only recent growth. The inhabitants very naturally, and, perhaps very justly, throw the blame on the Burman government, whose local officials, careful only for the revenue of to-day, neglect the duty of protecting the people, and leave them, their lands and their property, a prey to these wild depredators whose power for mischief might be not only curtailed, but effectually destroyed, were a little timely energy used towards them.

In the late conflicts between the Chinese and the Pansees, these Kakhyens have often mixed. More generally favourable to the Pansees because they are rebels against the Chinese, who used often to punish them, they have helped in their very rough way either side, according as their immediate interests prompted. Their feelings towards the Chinese may be imagined from what the Chinese themselves told me. "In old times" said they "the Kakhyens on our side of the frontier, were much afraid of the Chinese officials. How many villages have we burnt and how many men have we killed, to punish their robberies of our caravans. Several thousand men would go up and surround a village which had committed some outrage, and burn and destroy every soul and everything; but still after a few months a fresh village would spring up near the same spot, and it would be as bad as the former."

With some of the chiefs of the Kakhyens, on the mountains east of Bammó and Taiping, I became acquainted; and there is no doubt but that these chiefs are keenly alive to the fact, that, not only are they

the masters of the passes into China, but unless these passes are made use of, they can reap no advantage from them. The language of one of them serves as a sign of the feelings of all: "I will make a road across my district and will conduct any number of merchants safely into China; no other route shall be like it; and I don't care whether they be English, Burmese or Chinese. I want them through my district; and will guarantee that nothing shall happen to them." They, in fact, look on the routes as sources of income, and would be very glad to assist in making them safe and easy, provided they saw it to their advantage to do so; if, in short, tolls were secured to them. They care for no one party or nation more than another: the best payers will have their best good will.

It may be worth while remarking here that the general population of Northern Burmah, above Miadoun, is Shan. There are also along the Upper Detile *Pwons*, and to the west of Katha, *Kadoos*. Both these races, as well as the Shans, are Buddhists, and bear a good character for quiet, agricultural and trading industry. Their languages have a great many words identical with the Kakhyens, Burmans and Shans.

II.—PHYSICAL.

1. The Salween, splendid as the channel is near its mouth, unfortunately refuses to permit of navigation beyond a few miles above Maulmain, where commences a series of rapids and rocky passages that it is scarcely to be hoped, can be overcome or avoided by any engineering operations for which either Government or private capitalists could prudently provide the outlay.

2. The route viâ Shoaygyeen to the Salween and along its valley to near Kiangtungye, is so filled with well known obstacles, in the way of mountain ranges, made worse by the character of the Karen tribes inhabiting many of them, that it is unnecessary to speak of it.

North of our Pegu frontier is a great plateau, having a few isolated mountains and some ridges of hills, neither high, continuous nor precipitous. No physical difficulty, in fact, opposes the formation of any description of road across this plain from the Irrawaddy to the Shan mountains. This fact has invited much attention to this route, and up to that point, it is certainly most attractive. But what lies beyond? The very next step is an ascent of, at least 3500 feet above the plain. As far as I am aware, nature has provided no pass or

slope that the most enterprising engineer would think of attempting to make available to a Railway Company who wished to make their undertaking pay. The passes by which the natives go from the plains to the high lands are few, and are all reported to be difficult and tedious, even for the pack animals that now form the only means of transit for goods. The ascent once accomplished, hills and undulating ground at a general level of about 3000 feet continue to be the features of the country till the valley of the Salween is reached. Here a descent is to be accomplished, and if the Salween be navigable, the difficulties are over. But if, as I fear and expect, that river is not available for either steamer or extensive boat traffic, another ascent has to be made on the other side of the Salween, and a still less known series of mountain ranges and high lands must be traversed to reach the Cambodia. This, a much larger river than the Salween, has the character in Upper Burmah at least, of being like it, too rapid and too rocky to serve as a highway of trade. It is at any rate from just below Kiang Hunggyee to Kyangtsen, (*i. e.* from Lat. $20^{\circ} 30'$ to 22°) full of rapids, over which only small boats can be dragged safely.

Beyond the Cambodia, are mountains again, and no one knows what difficulties lie between that river and Esmok, wherever that may be, so that, after all, the route ends in the same unknown region and reaches the same undesirable goal as that advocated by Capt. Sprye.

It has been proposed as the best route by H. M. the king of Burmah himself, to start from the river at the capital and follow the ancient trade route of Thongze, Theebo and Theinnee; and, as far as I am in a position to judge, I think this route to be freer from physical obstacles than any more Southern one. The Irrawaddy conducts you to within 20 miles of the passes up into the Shan plateau. These passes, however, I believe to be quite impracticable for either rail or tramway. In 1861 passing along the westernmost ridges of the mountains where the Theinnee route pierces them, I had to go by paths at a height of over 5,000 feet (by barometer) above the river flats. I have been up and down the western face of the range in that neighbourhood by four different routes, each of them precipitous and not only at present impracticable, but, as far as one, without engineering experience, can judge, such that it appears impossible to make them available for any kind of rail or even tramway, without an expenditure

far beyond what it is possible to suppose can be made reasonably devoted to the purpose. The ascent once accomplished, however, an undulating and hilly tract of country permits of the easy extension of the road to Theinnee. From Theinnee it is, I believe, an almost uninterrupted plain to the very central point of Yunan city. Other routes are also open, viz., straight to Tali without passing through Yunchan—or again through Manyo to Maingmó and on by the further portion of the route to be next spoken of.

5. From Rangoon to the Burmese capital, the Irrawaddy river is known to be navigable and to be a good channel for steamer traffic. No steamer has, however, ascended beyond the capital further than Tsingoo, above which commences the lowest of the three defiles through which the great river passes in the upper half of its course, and it has been generally regarded as closed to steam traffic beyond that point. On my way up and down the river last year, I was naturally led to note most carefully everything that I could observe, bearing on this question, and took great pains in making such a sketch plan or survey as would serve as a guide to the river for intending navigators. All the obstacles, narrows, rocks, &c., in the way of safety to steam traffic, were there carefully noted, and I cannot do better here than copy the general observations I then made on this portion of the Irrawaddy.

“The chief characteristics of the Irrawaddy above the capital, are the three defiles, each of which has distinct features of its own. Above and below them, the river maintains much the same character as between Rangoon and Ava. In these open parts it may be laid down as a general rule, that navigation meets with difficulties in proportion to the breadth of the river. In the long reaches below Tagaung and in shorter portions equally well defined, where the breadth scarcely varies, and the banks are almost parallel, the channel may be taken anywhere between them. Where, however, the river spreads out into a varying expanse of stream, sandbank and island, the current sometimes fierce and to be overcome with difficulty, at other times scarcely moving; here several fathoms deep, there but a few feet or even inches, the relative positions of the deep and shallow being changed, often entirely reversed in a season, the navigation is intricate and difficult, sometimes even for the native boatmen. Such are the broad portions of the river near Powa, from Moale to Khyannyat—from Tongne to below Thigaim—from Thigaim

to Shoaggoo—and between Sawuddy and the upper defile. Still, even in these parts boats drawing five and six feet of water can always find passage and therefore with the aid of pilots or masters who have “an eye for water,” steamers could undoubtedly do so as well.

“The two defiles met with below Bammó are both remarkable for the contrast they present to the other parts of the river in their contracted breadth, their great depth and except in the freshes, their almost imperceptible surface current. The lower defile, extending from Singoo to Malé, has an average breadth of about one-fourth of a mile, the banks are wooded to below the high flood-mark and slope down from the hills whose steep sides form the valley of the defile, so as to afford a continuous series of pretty views, without any grand or imposing scenery.

“The second defile, much shorter than the lower one, is also of another character; approaching it from below, the narrowing of the river towards its mouth is gradual, but before entering it the high hills led one to expect that once within, the scenery would be something totally different from that seen either in the open reaches of the river, or in the lower defile. There was little room for disappointment. Soon hard limestone rocks mottled and striped with calcspar veins, formed the boundaries of the river, scarce a third of a mile across. As the channel narrowed still further, these rocks give place to bold and precipitous hills rising from the water’s edge, clothed, where not quite perpendicular, by thick masses of forest foliage,—and then to magnificent precipices, looking naked and defiant over the placid stream, and making the rugged jungle beside them appear beautifully soft.

“The most lofty of these cliffs is about a third of its length from the upper or eastern end of the defile. Overhanging the deep but quiet stream is a rough mass of rock about fifty feet in height, topped, it is needless to say, by a little pagoda, that peeps out from between the branches of some shrubs that have crept up from the jungle below, as if to look up and down the river. Close behind this rock, there rises straight up with one unbroken front, the face of half a mountain of which one cannot help asking ‘Who or what has split it in two to let the river pass?’ One involuntarily looks to the other side for the remaining half, but there lofty mountains form an irregular amphitheatre, with smaller hills piled one on another, leading up to them from the river side. The face of the precipice, perpendicular as

it is, cannot defy a few hardy climbing shrubs holding on to the lines of crevices and ledges between the strata of the limestone. Their roots and winding stems seem from below to be simply stuck against the rock. This imposing cliff is of the shape of a huge wedge, lying on its side, with one sloping face to the east, the other to the south, and each exposing an immense expanse of reddish grey limestone, streaked with interlacing white veins of calcspar.

"The great Irrawaddy itself seemed awed into quiet and humble limits as it wound beneath the cliffs of this defile. Actually not more than 200 and 300 yards wide, it looked but 100. The surface tranquil, with no perceptible current, the mighty stream of one of the finest rivers in the world, seemed to hide itself, and pass the mountain in the modest shape of a quiet creek.

"Beneath the surface, however, the current is as strong and rapid as it is quiet and gentle above, and it instantly drew the lead from its perpendicular.

"As to the depth, close to the face of one of the cliffs, the ten-fathom line could not reach ground; but at another spot I found bottom near the centre of the stream at eight fathoms.

"At one of the narrowest parts, I found the breadth of the river to be 970 feet, though judging from the eye, I could not believe it more than 150 yards. This defile is thus narrower, shorter, and more winding than the lower, and affords much more picturesque and imposing scenery. Neither the one nor the other, however, can be any obstacle to steam traffic. Except in the freshes, indeed, these are the safest, and easiest parts of the whole river. The spring rises, it is true, are said to cause very fierce currents, and it is not unfrequent that boats are lost in the effort to stem them. But steamers of not too great length and of sufficient power, would avoid the dangers that threaten boats poled and towed along the banks, and if able to conquer the flood stream, could ascend safely in all seasons.

"The few rocks found in the stream and those projecting from the general line of the banks, are noted in the sketch plan of the river. The most serious of these are at *Khyankmo* above Thigame, and just below *Koung-toung*, above the second defile. In both cases, however, there is clear passage for steamers, as indicated in the plan.

"The general course of the river, described as traced from below, is northwards to Katha and then eastwards, (including several bends to

the north-east and south-east,) to just below Bammó, where it again turns northwards, and continues in that direction as far as it has been explored. About ten miles above Bammó commences the Upper or 1st defile, of which it is sufficient here to note, that its irregular banks of limestone, flint and serpentine, would alone make steam navigation extremely dangerous; but the many places where boulders and islands composed of the latter two rocks stand out in the stream, forming a labyrinth of "Scyllas and Charybdises," make it quite impossible. At one spot where the whole Irrawaddy is literally poured through a gorge 50 yards in breadth, the labour and danger of getting a boat up round the jutting rock, even at the time of the slackest current, is very great, and the sensation of peril on being shot through the middle of it, when the river is rising, into the midst of the whirlpools that play below, is one that, once experienced, can certainly never be forgotten."

Two tributaries of the great river, from their position rather than their size, are also worth noticing here. One, the Shoaylee, which comes down from Yunan, close by *Maingmó*, and after traversing the Kakhyen hills, meanders through the Momeit plain, to fall into the Irrawaddy below Bammó, at about one-third of the distance between that place and Mandelay.

Could the passage of that river be taken as a proof that the Kakhyen hills are pierced by a valley, however tortuous, that it would be possible to take advantage of for a great commercial road of any kind, nothing would be more promising than the attempt to make such a road from, say Tagoung by Momeit to the Shoaylee valley, and to follow its course on by Maingmó into Western Yunan.

Unfortunately, however, I could get no tidings of such a valley. Quoting my journal again: "The accounts I get of the Shoaylee in its passage through the Kakhyen hills represent it as a succession of rapids, falls and rocky torrents, through impassable ravines. Once in the plains, however, it becomes a quiet river with numerous Shan villages on its banks. A few miles up from the mouth of the river, beyond which, time would not allow of my going, I find it at this season, (April) an even current of water, of a depth varying from a few inches to over 12 feet, running between banks two and three hundred yards apart, with marks of rise of water in the flood, of twenty feet or more above the present level. It is said to continue of this character

for one day's journey, and then for five days to be a most intricate series of shallows, islands, channels, and sandbanks, to where the Momeit river falls into it. One day leads to Momeit town, and at two or three days' boat journey from the junction, the Kakhien mountains are met with, and further progress stopped by the rocks of the ravines from which the river issues."

In the dry season, boats drawing three feet can ascend to Momeit. In the summer floods, the largest boats, of 80 and 100 tons can go up for two or three days' journey beyond the junction of the Momeit stream. The river is so winding however, that nine days' journey by the river can be accomplished in four by land, and except for rafts of timber, bamboos and pickled tea, and boats with heavy cargoes, the river is not much used, the land routes along its course being much more convenient for the lighter traffic. The lands near its banks are very low, are flooded in the rains, and reported to be very unhealthy. I may mention too that Kakhien are "about," even to within a few miles of its mouth. They come down from the hills, and burn the jungle lands on the plains for "Toungya" cultivation, and make all the roads unsafe.

The other river is the Taping. This too comes from Yunan through the same ranges of mountains, and falls into the Irrawaddy. Like the Shoaylee, it is worthless as a guide. I went up it as far as a boat could possibly go, except in the driest season. Issuing from the hills, about 15 miles E. N. E. of Bammó, near the site of the ancient Shan town of Tsemphenagó, or the "old Bammó," it is so far a quiet river, of a breadth varying from 100 yards to half a mile, (and now and then enclosing islands, half a mile or more in length, between its channels,) and of depth sufficient even in the driest seasons to give passage the whole way to boats drawing two or three feet of water, and often showing no bottom at two fathoms. In the freshes it rises some 15 feet or more and overflows its banks; it takes a moderately winding course to reach the great river at Suseewah, a couple of miles north of Bammó.

At the point reached by my boat, a few miles within the defile by which the creek comes through the hills, I found the first of the rocky portions that make navigation impossible, and from the manner in which, at that season of the least water, the stream poured through between immense rocks of silicious mica schist, polished and burnished by the friction of the summer flood, I was convinced that if but a slight

rise were to take place, no boat could even approach where we then reached, much less go beyond. There was seen indeed more than enough to verify the description given by the Shans of the utter impossibility of using the stream for navigation. As to depth, we could reach no bottom at 12 feet, even between rocks only 6 or 8 feet apart. Below these rocks the river was like a long placid pool, at the bottom of a deep ravine whose sides were clothed with luxuriant jungle. It is about 50 yards broad, the current on the surface scarcely perceptible, but the depth must be great, for within three feet of the water's edge, the 12 feet pole could find no bottom. Immediately on leaving the hills, the river spreads itself and begins to form large sandbanks and islands between its banks as above noticed.

The mountains just spoken of are the next claimants to attention. I regret very much that I have only been a few miles among them. From what I saw at that partial close inspection, and from the neighbourhood of Bammó and Sauwaddy, and from the information I have gathered from various sources, I believe that they consist of an irregular triple range of hills composed of limestone, mica-schist, gneiss and other primary rocks, running down from the mountain chaos at the east end of the Himalayas, where the Irrawaddy has its sources, and forming the boundary wall, as it were, between the high lands of Yunan, and the valley of the Irrawaddy. On the north it joins the mountains of the first defile, and on the south is connected with those pierced by the second, and it is, I believe, continuous with the range that passes east of Mandalay, down through Karennee to Martaban. The general width of the range, opposite the Bammó basin, varies from thirty to fifty miles. The Irrawaddy slope, about 15 miles east of Bammó, is much deeper than that towards Yunan. The average height of the western ridges, I guessed to be about 2000 feet. The number of passes into and through them as shown by Map No. 2, confirms the belief suggested by their appearance, that they do not form any thing like the obstacles to transit that the more southern portions of the range do. They can be traversed, in fact, from the Bammó to the Yunan side in as little time as is required to merely to ascend from the plain opposite Ava to the plateau of the Shan country, by the Netteik Pass. Of the various routes marked in the Map No. 2, those from Ingtha to Wannim and from Monmouk to Lucylin, are the most used ; but those to Maingmó have to traverse the least difficul-

ties, and I believe that there is more chance of finding a practicable breach for the charge of the iron horse between Sawuddy and MOUNGSUN, than in any other direction.

As above noticed, the two rivers Taping and Shoaylee that pierce the range from east to west, are of no use as guides; even their tributaries render the ordinary routes impassable in the rainy season. None of these mountain streams, however, are of a breadth too great to be bridged in the simplest manner, and wherever bridges are required, there is both timber and stone in abundance, everywhere at hand.

Once across this range of hills the physical geography of the land, as far as we know of it, is not unfavourable to the construction of any kind of road. The Taping and Namwoon valley stretches north and south from Chanda and Mola to below Mowun. That of the Namoung or Shoaylee leads from MOUNGSUN through fertile plains and by large Shan towns, among which are Maingmó and Seefan, to within forty miles of *Momien* on the left, and *Funchan* on the right. As the regular Chinese trade route is there reached, it is not probable that any insuperable obstacles exist to carrying on the lines and making new bridges over the Shoaylee, and the much more important Salween and Cambodia, where they are already spanned by the Chinese iron suspension bridges.

I have also been informed by travellers who have been there, that from MOUNGSUN there is an almost uninterrupted plain across to the city of Yunan, and that this direct route to that important capital passes over no mountains whatever.

III.—COMMERCIAL.

As to British Burmah it is unnecessary to do more than notice the fertility of the soil, its well-known production of rice and the paucity of its population.

Burmah Proper, however, requires more notice, not only from the extent to which it takes our manufactures in exchange for its own products, but also on account of its little known mineral wealth.

The total value of Exports from Upper to Lower Burmah in the year 1862-63, was in round numbers 43 lakhs of Rupees, of which 38½ lakhs' worth went down by the Irrawaddy. This amount included—Sesamum, oil and seed, 6 lakhs; raw cotton 4½ lakhs; jaggery 5½ lakhs; petroleum

1½ lakhs; cutch 1½ lakhs; timber 1½ lakhs; rubies 1 lakh; sticklack 1½ lakhs; gram 1 lakh; wheat 1½ lakhs, for the foreign markets or European consumption, and of native silk fabrics 4½ lakhs; cotton ditto over 2½ lakhs; lacquered-ware over 2½ lakhs; and pickled tea 1½ lakhs, for consumption in British Burmah. Nearly all the products thus exported are grown below the capital. They might be increased, it may be said, indefinitely, by a more numerous population, sure of more protection and freedom to dispose of property, than unhappily at present obtains. Large tracts of land to the south and of still greater extent to the north of the capital, formerly producing cotton for the China market, are now abandoned and left uncultivated.

As to the mineral resources, there are three or four distinct places where coal crops out, from which good samples have been procured, and that promise to be the signs of extensive veins. These spots are not distant from the river. Copper is found, but I do not know of the ore being worth working. Iron of good quality is made from the Hematite found near the Paopadoung, N. E. of Sagham, and also near the Arracan mountains beyond Yan. I can also give my personal testimony to the fact that large deposits of the richest magnetic oxide exist in the ridges directly east of the capital, surrounded by limestone which may serve as flux, and forests, (not improbably also coal) which may afford fuel. I can also guarantee that this ore, though it has never been made use of, produces a steel of first rate quality, and I have reason to believe that it exists in abundance within a stone's throw of the banks of the Myit-Ngé. Lead, silver, gold, and precious stones are mineral products of Burmah Proper, well-known to be at present comparatively undeveloped sources of wealth. To these may be added bismuth, sulphur, marble, serpentine, amber, salt and limestone. The iron and the coal are, however, of more particular importance with reference to the question under consideration.

The population of Burmah Proper including the Cis-Salween Shan States, may be estimated at 4 millions, (a very small proportion of this—probably not more than one million—Burman). Already a great portion of this population wear clothes of English manufacture, imported from British Burmah, including 13 lakhs worth of silk and cotton piece goods, 1½ lakhs of woollen ditto, and 3¼ lakhs of cotton twist and yarn. It only requires a better communication and a lower import tariff to increase the number of customers to the whole

population. At present a kerchief sells at Bammó for quite double its price at Rangoon.

The people of the Shan States traversed by the proposed overland route, are also consumers of British manufactures. The Shan States are believed to be rich in mineral products; the lead and silver of Burmah are almost entirely the produce of mines in Burmah—Shan territories.

In the northern portion of Burmah are held annual fairs at several points on the Irrawaddy, where not only the Shans, Pwoons and Kadoos of the interior, but the Kakhyens of the mountains come to buy the wretched specimens of Birmingham manufacture and the inferior cotton and silk piece-goods that the native traders of the capital take up to those markets. The trade is very unsatisfactorily conducted. The sales of each trader are small, but the profits large; the articles, therefore, are very inferior and very dear. None of them have ever been exported to China, the Chinese themselves producing better at a less price. Another important article of trade in that direction is salt. It is exported from Bammó all around, all the tribes, wild and peaceable, being dependent on Burman salt, and great quantities find their way into Yunan. The average wholesale price at Bammó is about equal to a penny a pound.

The commercial state of the Kakhyens of the hills is very simple. In some parts they grow a little cotton, more than enough for their consumption; in others they depend on the Bammó markets. They make strong cotton fabrics for their own clothing, of very excellent quality, that certainly Manchester could not compete with in price. The present merely nominal value of labour explains this cheapness.

In these mountains, however, are at least two most important metals, *lead* and *silver*. A specimen of galena that I obtained from a spot where it occurs in abundance, but which has not been worked as a mine, contains according to the analysis of H. B. Medlicott, Esq., of the Geological Survey, “63 ozs., 14 dwts. 8 gr. to the ton of lead, a very rich ore indeed.” Bishop Bigandet also informs me that he heard of mercury being procurable within a few miles of the western slopes, near the Burmese village of *Tali* (vide Map No. 2).

The eight Shan States on the other side of the range are known to be thickly populated, and labour is there abundant and exceedingly cheap. At their southern end, in Burmese territory, near

Kaingma, is an extensive silver mine, known for ages, but recently abandoned from motives only comprehensible to those in the secret of Burman politics.

As to YUNAN itself, with its ten millions of population and 21 cities of the first order, it is now well known to be, in a commercial point of view, one of the most important provinces of China. In the extreme south are *copper* and perhaps *zinc*, and certainly the finest *tea* in the Chinese Empire. The middle and northern portions are still more rich, the minerals alone including *gold*, *silver*, *copper*, *iron*, *mercury*, *arsenic*, *lead* and *coal*. *Silk*, *tea*, *rhubarb*, *musk*, *hams*, *honey*, and many articles suited rather for the Burman than European market are also produced, and were formerly exported from this portion of the Province. The centre of trade in western Yunan is *Yungchan*, where are the head quarters of the great company that has had for so many years, in its hands, the whole trade with Burmah. All the above-mentioned articles are there traded in. TALI and YUNAN are still more considerable places of trade.

The next province, SECHUEN, is, except in its being more distant, of equal importance to our object, with Yunan. It has a population of some 30 millions, and contains some dozen cities of the first order. It produces *silk* of better quality and more abundantly, I was informed by the Chinese of Bammó, than any other province. Its *tea* is also superior and abundant. It furnishes *rhubarb*, *musk* and several other drugs, and many of the minerals found in Yunan.

QUEICHO is also a province in the neighbourhood of Yunan, and the great artery of trade Yangtsekiang runs up from Yunan, between it and Sechuen. Its products and its market also are well within the reach of British trade viâ Burmah, if the proper route be adopted.

QUANGSI is, I believe, much infested with wild tribes, but the banks of the Tsiking or Pearl River are dotted with Chinese towns connected by roads with the city of Yunan.

The former trade between Yunan and Burmah consisted almost solely of an exchange of the *silk*, *copper*, *gold*, *orpiment*, *quicksilver*, *hams*, *honey*, *drugs*, *carpets* and *paper* of Western China, for the *raw cotton*, *ivory*, *amber*, *jadestone*, *peacocks' feathers*, *birds' nests*, &c. of Burmah. Little *tea* was brought over beyond what the Chinese in Burmah consumed and scarcely any of the foreign articles imported into Burmah were taken to China.

The following information regarding some of the products of Western China was given me by the Chinese merchants at Bammó :

SILK.—Two kinds are recognised, *Koezo* from a district of that name, and *Sechuen* from the province so called. Price of *Sechuen* silk, 20 and 25 tickals the bundle of 165 tick ; occasionally, however, it rises to 40 tickals. *Koezo* silk from 15 to 30 tickals the bundle. These are prices estimated from the old trade. Not an ounce of silk is sold at present at Bammó. The price of *Sechuen* at the capital is now from 30 to 35 tickals the bundle.

Very little silk is produced in Yunan. Nine bales make a bundle. They are packed first in paper, then oiled paper, then cotton cloth, and finally in case of transport to Burmah, in baskets lined with bamboo leaves, (the same as Kamsuks are made of,) and coarse carpets are thrown over the load of each pack animal.

The Chinese gave me the idea, that the road once open, this article can be supplied in unlimited quantity.

TEA.—The only kinds apparently known in the market at Bammó are the flat discs of China tea and the balls of Shan tea.

The discs weigh 20 tickals each ; seven piled together make a packet which used to sell at $1\frac{1}{2}$ tickal and 2 tick. At present no tea is found at Bammó, except the Shan balls.

Western Yunan seems to produce little of this article. To the north and south, however, I was informed it is grown in abundance. *Poour*, a city of Yunan, about fifteen days south-east of Tali, produces excellent tea, and some Chinese informed me that from that district came the tea specially devoted to the Emperor's use. Others, however, contended that Sechuen, not Yunan, produced this celebrated tea. All agreed that Sechuen produces good tea and more abundantly than Yunan.

COPPER.—In solid ingots or discs, and in the form of pots. The latter is the best, and used to sell at from 180 to 250 tick the 100 viss. The discs used to sell at from 100 to 180 tick. This is abundantly produced in Yunan.

GOLD.—In leaf and in small ingots. Always touched when dealt in. The leaf, more easily and exactly estimated, averages 19 tickals of silver, the tickal of pure gold. It varies, however, to from 10 to 20 tickals. The ingots are less in value, owing to the less amount of certainty in the estimation of their quality, and are generally sold at 8 annas less than the leaf per tickal of estimated pure gold.

OPUM.—Packets in paper, one viss each, averaged 20, 25 and 30 tick the viss, but varying from 10 to 50 tick on unusual occasions. The present price is 20 tick when bought by the traders of Bammó from the Kakhyens and Shans, who are now the only importers. The packets are some of them well packed and labelled, and are the produce of China; while the rest are carelessly packed, sometimes adulterated and are the produce of Shans and Kakhyens.

MUSK.—This is mostly purchased by the Chinese from the mountain wild tribes. Its present price is 20—25 tick, the tickal, bought in the natural bag. It comes from Mogoung, Khamti and the Shan States as well as from the mountains in China Proper.

SILVER.—I was informed is obtained from several mines. Perhaps the same motives led to the localities being not spoken of as to the Chinese telling me that the gold mines were exhausted.

COAL.—Several accounts agreed in affirming that there is abundance of this mineral at Momien and at Tali.

SALT.—There is no salt produced in Yunan as far as I could ascertain.

SUNDRIES.—Straw hats, felt rugs, strike-lights, paper, white and coloured, rhubarb and other drugs, hams, honey, pipes, jackets and pants used also to be imported for sale to Burmans and Shans, and exportation down the river. Formerly at Bammó they used broadcloths and other woollen and cotton stuffs imported from Yunan. Now every thing comes from below, and British stuffs, were pointed out to me as "having come round by sea from Canton instead of as formerly, overland."

The raw cotton formerly exported to Yunan from Burmah exceeded a million of pounds a year. It is used not only for weaving but also for padding the winter garments.

Both this foreign and the internal trade of Yunan are now in abeyance, and for the time, extinct, owing to the disturbed state of that province, and the opposition of the Kakhyen tribes to Chinese traders. The capabilities of the country, however, remain the same. The articles of British manufacture that I could ascertain to be likely to find a market in Yunan, are broadcloths, lastings, blanketings and flannels, manufactured figured and damask silks, calicoes, long-cloth, muslins, jaconets, drills and plain *dark blue* or *black* cotton cloth, for which there is unlimited demand. *Broad-cloth* is universally used by

the Yunan Chinese who can afford to buy it. Blue and black are the favourite colours. Some fine broad-cloth I had purchased at Rangoon at $7\frac{1}{2}$ Rs. the yard, would, at no time, fetch that price in Yunan, I was told. The home-made cloth was described to me as very thick, and used to sell at from 3 to 6 tickals the cubit in Yunan. That which came from Canton overland and from the interior, (Russian?) they describe as thinner, like the cloth I had bought at 15 shillings a yard at Rangoon, and worth 1.8 or 2 tickals a cubit. There is however no doubt, I imagine, that cloth can be brought from England to Momien, viâ the Irrawaddy, at a cheaper rate than viâ Canton. Cotton twist and sewing thread, cutlery, buttons, mechanics' tools, locks and sewing needles, were also mentioned to me as things wanted for sale in Yunan.

The prices of all these articles have hitherto depended on those of Rangoon or Mandelay. It appears that British goods have never been, to any extent, imported into Yunan, viâ Bammó.

In explanation of the above prices, I should mention that a tickal weight is the 28th of an English pound, and a tickal of silver worth just $1\frac{1}{4}$ Rupee or half a crown. A viss is 100 tickals or exactly lbs. 3.652.

IV.—CONCLUSION.

From the statements brought forward under the preceding heads, and especially those under para. 2nd or that of the Physical Geography of the country to be traversed by the proposed line—and not omitting from consideration the new political position of Upper Burmah in reference to us, as well as the direction which any future political changes would certainly take—what then is the best route for European enterprise to avail itself of, in its endeavour to create a China trade through Burmah?

Granting that the object to be sought is the most feasible way of reaching commercially the products and the markets of western China, especially Yunan, Sechuen and Queicho, it should first be ascertained what conditions should determine the plan to be adopted, in order to obtain that object.

Besides the obvious ones of the least political difficulties and the greatest commercial advantages, are there not others that have not perhaps hitherto been sufficiently thought of? viz. 1st. The holding in

our own hands and having under our control the greatest possible length, at this end, of the line of communication ; 2nd. That the plan be capable of being tested without a previous great expenditure ; 3rd. That when permanently established, as little as possible of the capital embarked in the means of transit be irretrievably sunk ; 4th. That the general route adopted be one already known and made use of by native traders ; 5th. That it also be one that—failing the possibility of constructing either a tram or a railway, either at once or even ultimately—may yet be worked with no great hindrance by the construction of a cart-road ; 6th. That the changes of mode of transit be as few as possible ; and 7th. That in short the greatest safety, cheapness and rapidity of carriage be combined with the least sinking of capital in the fixed plant intended to form the means of transit.

3. If such are the desired conditions, is it not obvious that, provided the Irrawaddy be navigable, and it be feasible to make a road from its highest easterly turn to Yunan, the best means to the object sought, is steam communication between Rangoon and some point near Bammó, and a land road thence to Yunan ? That the Irrawaddy is navigable for steamers just up to the desired point and no farther, I reported, a year ago. That the road across the 30 or 40 miles of Kakhyen hills to the plains of Yunan, can be constructed and ultimately replaced by a tram or railway, I have also recorded my firm conviction. Granted these two provisions, this route, then, sanctioned by ages of use between Burmah and China, shown above to be politically and physically that most feasible to follow, and commercially that most likely to give the highest returns for the least expenditure, is surely worthy of more attention than has hitherto been paid to it. Indeed the reasons for preference are so obvious and so old, that there is no room for a “discoverer,” and I long deemed them too evident to need an advocate. It is true that, as long as the Upper Salween remains a river, whose navigability is only “not proven,” we are none of us in a position to speak with absolute certainty. In regard to the Lower Salween, and the overland routes to Esmok, we have seen that material obstacles oppose themselves most strongly to their adoption. That, in the advocacy of which Capt. Sprye has so usefully and successfully roused the mercantile community at home, has the disadvantage of passing through hundreds of miles of unsettled country, peopled in many parts by wild and savage tribes, of traversing

several successive mountain ranges, and the valleys of three considerable rivers, the Sittang, the Salween and the Cambodia. But even if the "Emporium" of Esmok be neither a myth nor a hyperbole, that is surely not the point where it is most desirable to tap Western China. It is too far South for the districts we want, and for the desired easy access to the western end of the Yangtsekiang; while Quangsi is certainly not worth the trouble of reaching it by such a route, even if it were practicable. For my own part, I am indeed convinced that my anticipations, as recorded at the time of my first visit to Upper Burmah, will be ultimately realized, viz. that the ancient trade between Yunan and Burmah, viâ Bammó, would be revived and increased to a vast exchange between the manufactures of England and the products of China.

4. Intimately connected with this subject of trade route, is that of the overland telegraph communication between India and British Burmah, and the open ports of Eastern China. In reference to that subject and to the possible railway, I quote from a letter, written soon after my return from Bammó last year.

1. "As to a telegraph from Shanghai to Yunan city, a line may and will pass, along the great artery Yangtsekiang.

2. "From Canton to Yunan, the Tsikyung may contend for the line to follow its course in preference to the above. There will probably be both.

3. "From Yunan city there is the regular trade route and high road through Tali and Yunchan to Momien, and thence through Sanda, Mowun or Maingmó to Bamó, or a point just below it. Between either Sanda, Mowun or Maingmó and the valley of the Irrawaddy, is about 30 miles of mountainous country inhabited by Kakhyens. At first these people would not perhaps respect the wire, especially in case of any individual being in want, at any moment, of metal for his bullets, arrows, or spears; but for ages they have been accustomed to give safe escort to dawk runners, and, to begin with, this two days' march may be got over in that way. Trifling subsidies would, however, soon reconcile the tribes and ensure the continuity of the wire.

4. "From the foot of the Kakhien mountains to Bammó and on through Shoaygoo and Katha to Munipoor, across the country of quiet trading Kadees, there is no obstacle either geographical or in the way of wild tribes. From Munipoore to Calcutta, although in our own

territory and dependencies, would perhaps be the most difficult part of the line. Part of it, however, is already completed by the Assam lines.

5. "Such a line would be almost entirely between Lat. 23° and 25° , and in the case of the Tsikyung being followed from Canton to Yunan, would very nearly describe an arc of a great circle passing through Calcutta and Canton.

6. "From Katha a line would, of course, branch off and connect Rangoon viâ Mandelay and the present Pegu line with Bammó. Indeed this portion from Bammó to Thayetinyo or Prome will be, probably, the first constructed.

7. "A telegraph may go where a railway cannot; but the same reasons that forbid me to think of any other route than the above for the former, force me to believe that if Western China is to be tapped at all from the West or South, it will be by the same route. And if a railway or tramway be required, it will be from the neighbourhood of Bammó to Yunan city. The possibility of such a railway is for the present, I admit, as chimerical as that of one through any other unsurveyed region. By this route, however, the unknown occupies less of the distance than by any other.

8. "*The railway, however, is not necessary to even a vast commerce by the Bammó route.* River steamers and flats can navigate the Irrawaddy up to Bammó. There is the alternative of the Taping river or a perfectly flat road from Bammó to the foot of the Kakhyen hills. Up to this point, the route is through our own and the friendly Burman territory, the latter open to us by right of treaty.

9. "Three or four days mountain route, frequented from time immemorial by thousands of ponies, mules and asses that have carried westward, silk, tea, copper, gold, &c., and eastward, cotton, salt, serpentine, &c., reach Sanda or some other Shan frontier city, whence again the route is taken up by the civilization of China, and carried north-east, east and south-east.

10. "Bammó will be a mart again in a short time, as soon, in fact, as Yunan is quiet enough to make any trade possible; and seeking for any new mart in the unknown regions of Esmok, seems like looking for a new port to get at the cotton of the Confederate States, somewhere in Chili, because Charleston happens to be for the present, blockaded.

The modification of this route which, I believe will be found advisable is, as mentioned under the 2nd heading, to stop the steam

traffic at a point below Bammó, say *Sawuddy* or even *Koungtoun*, and to make a tram or railroad along the plain to near Masseen (vide. Map, No. 2). The passage of the 30 miles of Kakhyen hills to be made by a good road that may be, by and by replaced by a tram or railway. The telegraph to follow the same line, and both road and telegraph to enter China by the Shoaylee valley at Moungsun, and pass on by Maingmó, Seefan and Minglon to *Yunchan*, instead of passing from Bammó by way of Sanda and Momien to the same city.

11. "Referring to both trade and telegraph route, if any line is possible, it appears to me that this line is the most so. If any line will pay, it must be this, and if any line can be safe it must be this. Such a line will be, I firmly believe, that ultimately adopted, since it will be the shortest, the easiest, the cheapest, and the safest, and it follows the most frequented and oldest trade routes through the most populous and civilized territories between the Indian and Chinese seas."

Whichever be the route followed, however, and it may be that thorough surveys will entirely change the data on which present opinions are founded,—the day is evidently not far distant when Burmah will become the highway for a vast trade with China. Although Yunnan is, for the time, so disturbed, I see no reason to fear that the domestic and foreign trade of that province will long remain in its present unsatisfactory state of abeyance. The Pansee revolution may indeed be found to have been useful in breaking up the power of exclusion of the Chinese authorities, backed as this would have been by all the influence of the Chinese merchants, whose jealousy blinds them to their true interests, and especially of the old Burmah company;—the chief of whom is said by the Right Rev. Bishop Chauveau to have 80,000 men at his orders. And while the province is in course of resuming such a settled condition as will make extensive commerce possible, whether it be under the old Chinese or the new Pansee authority, the surveys may be made, the routes and plans of action definitely arranged, and perhaps the communication opened just in time to meet the reviving trade.

The Taping rebellion by impeding as it must do, the commerce between the western province of *Yunnan*, *Sechuen* and *Queicho*, and the eastern seaboard, encourages the attempt to pierce those provinces from the west. They form a splendid field, most inviting to the

spirit of enterprise that of old has characterised our commerce. There are forty millions of people waiting to be clothed with British piece-goods, and to be furnished with the handiworks of all the manufactories of England, and ready to give, in return, silk, tea, and the most valuable of the useful and precious metals, from mines that European skill would make many-fold more productive than now.

The barriers imposed by man are removed. There remain but those of nature. To the conquest of these, our science and capital, energy and perseverance will march again as they have so often marched before, and again will overcome them; to British commerce will accrue a new nation of buyers of our goods and sellers to our wants; to the cause of progress, a new opening for the living civilization of Europe to compete with the sickly semi-barbarism of Asia; to the cause of religion and humanity, a new field for Christian truth and beneficence to modify, alleviate and displace the cruelties of a fierce fanaticism and the vices of a degraded infidelity.

With the opening of this new way to China will be written a fresh page in our already glorious commercial history; will be taken another step in our onward destiny, and will be given yet another proof that Providence sanctions the mission we attribute to our race.

Mandelay, April 25th, 1864.

*Table of the Coins of former Governments more or less current in
the Bazars of the Goojrat District in 1859.*

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[Received 16th February, 1861.]

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
1	Ghuznee.	None.	Un-known.	8 Mashas.	These coins are scarce, they pass for 11 annas and 3 pies. Their date of coinage is not exactly ascertainable.
2	Alla-uddeen Mahomed Shahi.	Ulsooltan-ool-Azim Ala woodoonia woodoen. Abdool Moznffer Mahomed Shah ul Sooltan. Secunder sani zaheerool Khilafa nasiramirooka nowneen.	883 Hijree.	11½ Mashas.	The silver of this coin is very pure. The coin is rare, and is much prized, being supposed to carry good luck with it. It is worth R. 1-4 and is often sold for as much as Rs. 2.
3	Feroze Shahi.	Ul Khuleef-amir-ool momneen Khuludulla moolkhoo. Futtyab Feroze Shah mud-dullah.		9 Mashas.	This coin passes for 12 annas. Only a few are current.
4	Feroze Shahi.	Ul Khuleef-amir-ool momneen Khuludulla moolkhoo. Feroze Shah Sooltancee zurbut fee Khilla Dehlee.		9 Mashas.	As No. 3.
5	Akbari.	Lailaha ililah Mahomed oor-russool ililah. Jelalooddeen Padshah Ghazee.	993 Hijree.	11 Mashas, 3 ruttees.	The silver of this coin is very pure. It sells for Rs. 1-4 in the Bazar.

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
6	Akbari.	As on No. 5. Jelaloodeen Mahomed Akbar Padshah Ghazee zurb oordoo zuffer pykur.	993 Hijree.	113 Mashas.	This coin is frequently met with. It sells for Rs. 1-4 to 1-8.
7	Mahomed Shahi.	Sikka Mahomed Shah Padshah Ghazee. Juloos mymnut maloos moostukurool Khilafé zurb Akbarabad.	1015 Hijree.	114 Mashas.	This coin is very common. Its price is generally about R. 1-0-6.
8	Alumgiri.	Sikka zuddur Jehan Chobudur moonceer Shah Aurungzebe Alumgeer. Juloos mymnut maloos zurb.	1118 Hijree.	11 Mashas, 2 ruttees.	As No. 7.
9	Mahomed Shahi.	Mahomed Shah Padshah Ghazi Saheb Qiran sani. Jaloos mymnut maloos zurb dar-ool khilafah Shahjehanabad.	1161 Hijree.	114 Mashas.	As No. 7.
10	Cashmiri do sumu.	Sikka buzur zud zimahee ta bamah Khooserve gaittee. Sitan Mahomed Shah zurb Cashmir sundo.	1162 Hijree.	11 Mashas.	This is an impure coin. It only sells for 5½ annas.
11	Ahmed Shahi.	Sikka mobaruk Ahmed Shah Padshah Bahadur Ghazee. Jaloos mymnut maloos zurb sahrind.	1204 Hijree.	114 Mashas.	As No. 7.

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
12	Ahmed Shahi.	As on No. 11. Jaloos mymnut maloos zurb Etawah.	1204 Hijree.	11½ Mashas.	As No. 7.
13	Gobind Shahi.	Deg-tegh Fatty nusrut be dring-yaft az Nanuk Goo- roo. Gobind Sing.	1836 Sumbut.	11½ Mashas.	Common. Sells for 14 & 1½ annas.
14	Kandar Cashmiri.	Kuraryaft ba hookum i Kho- da hurdo jelian rewaj Sikka dowlut ba nam Shah zuman. Jaloos mymnut maloos zurb Cashmir.	1204 Hijree.	11½ Mashas.	Common but full of alloy & sells only for 11 annas.
15	Nanuk Shahi Poorana.	As on No. 13. Jaloos mymnut maloos zurb Akal.	1861 Sumbut.	11 Mashas, 1 ruttec.	This coin sells for 14 annas and 9 pies. It is often met with.
16	Wuzeerabadi.	As on No. 13. Jaloos mymnut maloos sree Umritsur.	1859 Sumbut.	11 Mosbas.	This sells for only 12 annas being full of alloy.
17	Kulladar Jerlu kul.	Sikka zad bur huft Kishwar Sahé Fuzl illah hamideen- i-Mahomed Shah Alum Bad Shah. Jaloos mymnut maloos zurb Furookhabad.	1221 Hijree.	11½ Mashas.	Sells at par. Only a few are obtainable.

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
18	Kulladar Seedhe kul.	As on No. 17.	1222 Hijree.	11½ Mashas.	Sells at a discount of 6 pies.
19	Chulledar.	As on No. 17.	1222 Hijree.	11½ Mashas.	Sells at a discount of 3 pies.
20	Pooklita Cashmirek sunna.	Sikka shood roshun zi shahe Noordeen ruij az mukhdoom Qootub Arfeen. Zurb khilla, Cashmir sun-iahed,	1223 Hijree.	11 Mashas.	Very impure, worth only 6½ annas.
21	Cashmire nowa.	Zud ba taced girdgar Azeem Shah Ayoob Sikka brer zur seen. Jaloos mymnut maloos zurb Cashmir.	1224 Hijree.	11 Mashas.	Very common, worth 10 annas.
22	Tisunna Cashmire.	Sikka bur zurzud ba towfoeq-i-illah khoosrowe gnitee sitan Mahomed Shah. Zurb khilla Cashmir sun toen.	1224 Hijree.	11 Mashas.	As No. 21.
23	Jelalpooria Golab Singhia.	As on No. 13. Zurb Jaloos mymnut maloos sree.	1865 Sumbut.	10 Mashas, 5 ruttees.	Value 8 annas.

Figure.	1. Name.	Inscription.	Year of Coinage.	Weight.	
24	Cashmiri.	Sikka zaddar Jehan ba fuzl illah gusht rajj ba nam Qaisar Shah. Zurb khilla Cashmir.	1225 Hijree.	11 Mashas.	Value 10 annas, uncommon.
25	Kunjur Shahi.	As on No. 13. Zurb mynnut sree.	1866 Sumbut.	10 Mashas.	Worth 9 annas, very common ; the usual medium of pre- sents at marriages.
26	Goonda Mahomed Shahi.	Gaitce sitan, Mahomed Shah. Durool Sultanut (imperfect).	1229 Hijree.	11 Mashas.	Worth 12 annas, common.
27	Moli Ramia.	As on No. 13. Zurb Khilla, Cashmir.	1877 Sumbut.	11 Mashas.	Value 9 annas ; rather scarce.
28	Lahori.	As on No. 13. Zurb sree akal.	1877 Sumbut.	11 Mashas.	Common and pure. It sells at par.
29	Lukhnaw.	Sikka zul bur seemozar az fuzl Rubb-i-zool Enunnun Ghazecoodcen Hydené alee nusab Shahé zumun. Jaloos mynnut maloos zurb dar ool Sultanut Sooba Owud.	1842 Hijree.	11 Mashas.	Lately become common, impor- ted from Hindustan in con- siderable numbers. Sells at par.

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
30	Saheb Singhia.	As on No. 13. Mynut zurb sree.	1882	11 Mashas.	Value 14½ annas, not common.
31	Chittia Nanuk Shahi.	As on No. 13. Zurb sree Akal.	1882	11½ Mashas.	
32	Lahori.	Sikka zud bur hurdo Alum Shah Nanuk Wahib ust. Fetty tegh Gooroo Gobind Singh fazl sucha Sahib ust.	1879 Sumbut.	11¼ Mashas.	At par value.
33	Shere Singhia.	As on No. 13. Zurb sree Akal.	1879 Sumbut.	8¼ Mashas.	Value 11½ annas.
34	Rulia Rami Pind Dadun Khani.	Tegh Gooroo Gobind fazl. Zurb Akal.	1879 Sumbut.	11¼ Mashas.	Par value.
35	Kirpa Rami.	As on No. 13. Zurb mymnut Cashmir.	1876	11 Mashas.	An impure coin, worth only 11 annas.

Figure.	Name.	Inscription.	Year of Coinage.	Weight.	
36	Tomanchi wala.	Saheb Qiran. Jaloos Mymnut maloos.		11 Mashas.	An old coinage of very pure silver: date unknown, scarce; worth 16 annas.
37	Rajah Shahee.	Sheonathjee Sehoy. Zurb sree.	1194 Hijree.		A 4-anna piece.
38	Hurree Singhee.	Sheonathjee Sehoy. Zurb sree.			Ditto.
39	Bahawul pooria.	Sikka Moobaruk. Mymnut sun jaloos zurb.	1261 Hijree.	8 Mashas.	Common, value 11 annas.



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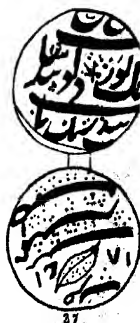
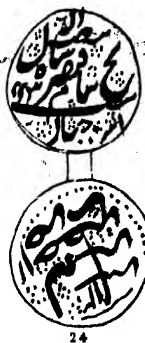
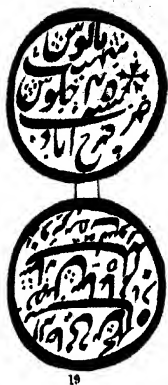
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LITERARY INTELLIGENCE.

The following is an extract from a letter lately received from General A. Cunningham.

In following up the history of the different races of the Punjab, I have extended the enquiry to the Chinese accounts of the Yue-chi, White Huns and Turks, and I believe that I have succeeded in identifying two of the Khakans of the White Huns and one Khakan of the Turks with some of those who are mentioned in western history. The want of success which had hitherto attended all attempts of this kind has led some ethnologists to doubt the value of the Chinese accounts of the Tartar nations but the identifications which I have already made will tend to remove this reproach. Thus $\Delta\iota\zeta\alpha\beta\omicron\upsilon\lambda\omicron\varsigma$ the $\chi\alpha\gamma\alpha\nu$ of the $\tau\omicron\upsilon\rho\kappa\omicron\iota$, who received the embassy of the emperor Justin is beyond all doubt the same as the great Khakan *Sha-po-luo* of the Turks, whose rule extended to the Caspian. The dates correspond; and so also do the names, for I take *Diza* to represent *Sha* of the Chinese—for which the more correct representative would have been *Dza*. But just as the $ch = ts$, of *Chatur* became $\tau\epsilon\sigma\sigma$, so the J or $Z = dz$ became $\Delta\iota\zeta$. The name in fact is the same as *Zamol* in *Zamolxis*, and *Zabul* in *Zabulistan*, both of them being only the Scythian appellation of Hercules.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,

FOR JULY, 1864.

The Monthly General Meeting of the Asiatic Society of Bengal was held on the 6th Instant.

Captain W. N. Lees, Vice-President, in the chair.

The Proceedings of the last meeting were read and confirmed.

Mr. Oldham said—

“At the last meeting of the Society (June 1st) the attention of the members was directed to a very interesting specimen of a fossil reptilian, which had been received by the Society from Nagpore: and the Secretary (Mr. Blanford) made some valuable remarks bearing on the natural history, and geological age of this fossil. Mr. Blanford stated that the locality where it had been found was within the limits of the area coloured on the Geological Survey map of the Nerbudda valley prepared by Mr. J. G. Medlicott, as belonging to the “Mahadeva” group; and then entered into some speculations as to the possible age of this group, pointing out how essentially the fact of the occurrence of this reptile in the rocks of that group would affect the question of their geological age. As I believe that this fossil has nothing whatever to say to that group, I would desire to record the facts.

“It was stated to have been found about a mile west of Bijori village, at a spot where the stream is crossed by the cattle road from the Puchmuri plateau by Rori, &c. Now a mile west of Bijori, and where the hill path crosses the stream, is well within the limits of the Damuda works, on Mr. Medlicott's map, and as I have been at the spot, I can also say that it is so, in reality. Further the spot indicated on the map by Lieut. Sim, neither coincides with this description of the spot where the fossil was found, nor is it, at the base of

the Mahadeva hills as stated, but on the top. There is, evidently, therefore, nothing trustworthy in either of these statements, as bearing on the question of what group of rocks the fossil in question was derived from. Immediately on seeing the announcement of the discovery, I wrote to the Rev. S. Hislop of Nagpur, asking him to make very particular enquiries as to the locality, and stating my belief that it would be found not to be from the Mahadevas: and, with the permission of the Society, I will read an extract from his letter in reply, the last, I regret to say, of a long and valued correspondence I had with him. His intimate acquaintance with the rocks in his district, gives special value to his observations.

“Mr. Hislop writes—(under date 14th August, 1863) speaking of the fossil in question—‘On the footpath leading to the Rori-ghat, Major Gowan met with a detached block of sandstone, bearing the impression of the ribs and vertebral column of an animal, which the natives around were in the habit of calling a fish, but which our countryman more properly considered a reptile. The matrix having been found out of position, it was difficult for the discoverer, or the European officer who was requested subsequently to tread in his footsteps, to ascertain to which sandstone strata it had belonged, whether to the great pile of arenaceous beds that constitute the mountain mass, or to the few that lie below. *This is no longer a matter of uncertainty.* I have had a good deal of experience in the various kinds of sandstone that occur in this province, and the sample from near Bijori I saw at once belonged, not to the Mahadeva formation but to the lower Damuda group. There was an absence of all tendency to ferruginous septa, so characteristic of the former, and an abundance of mica so uncommon in the former, but so frequent in the latter. In splitting some of the laminæ produced by the mica, I detected carbonaceous matter, such as is found between the layers of the Lower Damuda sandstone. *There can be no question then, that the slab is from the inferior strata of our Indian Coal formation.*’

“Mr. Hislop proceeds to describe the characters of the Reptile in question, and to note the particulars which he observed when clearing out the fossils from its matrix. But these are matters relating to its natural history, and my only object now is, to place on record the fact, that the specimen in question had almost certainly, nothing whatever to say to the ‘Mahadeva’ group.

“Mr. Blanford himself noticed the difference in mineral character of the rock in which this fossil was imbedded, as compared with the ordinary aspect of the Mahadeva rocks.”

Mr. Blanford remarked that he too had inferred from the mineral character of the matrix that the fossil was not from the Mahadeva sandstones, but showed that the spot marked by Lieutenant Sim on Mr. Medlicott's map placed it in the Mahadevas, and at some distance from the boundary of the older rocks.

Presentations were received—

1. From the Under Secretary to the Government of India, Public Works Department, an impression in clay of a Sanscrit inscription found at the foot of one of the jambs of the inner gateway of the ruins at Baragaon.

2. From Colonel S. R. Tickell, two specimens of a fish in spirit, supposed to belong to the Cod family.

3. From J. R. Macdonald, Esq., a specimen of a mat used by the natives of Moulmein for thatching purposes.

4. From A. Grote, Esq., specimens of a *Hylobates lar*, and a Centipede.

5. From Dr. Squire, on the part of Mr. Dunn of Akyal, a collection of snakes in spirit.

6. From A. Carlyle, Esq., Officiating Curator, two specimens of a large species of Petrel, a few specimens of North American fresh water and semi-fossil shells, and a piece of Iron Ore from N. Wales, also a few small specimens of native Turquoise found *in situ* in Asia Minor.

7. From the same, a copy of Graves' *Ovarium Britannicum*, also two articles about the battle of Trafalgar and Lord Nelson, published in the *Gibraltar Star* a few days after that battle.

8. From the same, specimens of fishes and crustacea from the Salt Water Lake.

9. From Mr. C. Swaris, a pair of shoes used by the people of Bhotan.

Letters from J. P. Grant, Esq. C. S., and Baboo Ramgopal Ghose intimating their desire to withdraw from the Society, were recorded.

The following gentlemen, duly proposed at the last meeting, were balloted for and elected ordinary members :—

Lieutenant H. Trotter, Bengal Engineers.

J. C. Whishaw, Esq., Civil Surgeon.

Baboo Debendra Mullick.

The following gentlemen were named for ballot as ordinary members at the next meeting:—

Dr. C. R. Francis, proposed by Mr. Grote, seconded by Mr. Blanford.

C. B. Garrett, Esq., C. S. proposed by Mr. Grote, seconded by Mr. Blanford.

W. Swinhoe, Esq., proposed by Mr. Obbard, seconded by Mr. Blanford.

Rev. J. Ebenezer Marks, proposed by Mr. McCrindle, seconded by Mr. Blanford.

The Secretary read the following letter from Mr. Oldham:—

Calcutta, June 21st, 1864.

To the President and Council of the Asiatic Society.

GENTLEMEN,—While feeling much honored by my re-election to the Council of the Asiatic Society, I regret that I cannot accept the duty without sacrificing a principle for which I have long and strenuously contended. I only ceased to urge the alteration in the rules of the Society which make a certain annual change in the constitution of the Council and officers compulsory, because some of my colleagues, approving the principle, and proposing to act on it, still thought it not desirable that this change should be obligatory.

Glad, therefore, to see this change introduced, as I believe it to be essential to the well-being of the Society, I could not without great inconsistency, again rejoin the Council at present. After the lapse of the proposed interval, I shall be happy to be of any service in my power.

I am, Gentlemen, &c.,

(Sd.) T. OLDHAM.

The report of the Council, appointing Mr. H. B. Medlicott, a member of their body, vice Colonel Dickens, was confirmed.

The Council reported that they had elected Messrs. J. Strachey and J. Geoghegan to the Council, in the place of Mr. H. Scott Smith, deceased, and of Mr. Oldham, who has declined to accept the nomination.

Communications were received—

1. From Colonel S. R. Tickell, description of a supposed new genus of the Gadidæ.

2. From the Secretary of the Punjab Auxiliary Committee to the Asiatic Society, papers containing a description of Coal in the Khuttak Hills.

3. From R. H. Barnes, Esq., Meteorological Abstract of Observations taken at Gangarowa, Ceylon, from September, 1863, to February, 1864.

4. From Dr. C. Williams, Memorandum on the question of British Trade with Western China viâ Burmah.

5. From Baboo Gopinath Sen, an Abstract of the results of the Hourly Meteorological Observations taken at the Surveyor General's Office in April.

6. From Captain W. N. Lees on the Romanizing of Oriental Alphabets.

Captain Lees then read his paper above mentioned;* and at the close of the reading a discussion ensued on the interesting question of which it treated, in which the Lord Bishop, Mr. Hecley, and the author took part. .

The Bishop heartily agreed with Captain Lees that the Roman character should be used in reducing to writing the languages of the aboriginal tribes of India, and regretted very much that Drs Judson and the American Missionaries had written the Karen language in Burmese characters. He also rejoiced in the willingness which Captain Lees had expressed to apply the Roman alphabet to Hindustani. But he desired to go further than this, and omitting the consideration of dead languages, as involving many peculiarities which it would be too long to discuss, he would gladly see that alphabet used for all the living languages of India. That a change of alphabet was practicable, he considered certain, for it had frequently occurred. The old Hebrew character, now commonly called the Samaritan, was abandoned at the time of the captivity, and for that alphabet (which had probably been regarded as sacred, certainly as venerable) the square Chaldee letters were substituted, in which we now read our Old Testament. The Mahomedans forced the Arabic letters, as a religious duty, on the nations which they conquered; and they are now used in writing languages as different as Arabic, Persian and Malay. Yet the Persians had a character which they must have regarded at least with reverence, and to which they had been accustomed for ages. In Europe

* See *ante*, p. 345.

there had been changes, scarcely less important, from the Celtic and Gothic alphabets to the German and Roman. Captain Lees had quoted the tenacity with which the Germans and Greeks cling to their own alphabets in support of his argument. But in the first place the difference between those alphabets and the Roman is trifling, and the trouble of decyphering them slight. In the second, in each case there had been a patriotic feeling recently at work in favour of the old alphabet: the wars of Napoleon had thoroughly disgusted the Germans with everything French, and therefore with the Roman Alphabet: and the newly emancipated Greeks were anxious to prove their descent from the contemporaries of Thucydides and Plato. Besides, in Germany, the Roman alphabet was making way. Ewald, for instance, had printed his history and commentaries in that character. Again, the Dravidian language in Southern India used alphabets derived from the Devanagri; though they had no affinity to Sanscrit, and therefore they might as well use the Roman. Hence, as the change appeared from historical examples to be practicable, it ought to be adopted, not merely from theological or economical, or any partial consideration, but from the general fact that the multitude, variety, and needless diversities of the Indian Alphabets, made it absolutely impossible to master all the Indian languages, and effectually separated from each other the natives of different parts of the peninsula. Captain Lees had scarcely stated with sufficient force the terrible medley of characters with which the country was afflicted. Dialects differing less than those of Yorkshire and Somersetshire, were written in different characters. The two great parent alphabets had branched out into at least twenty varieties. Orissa had a different form from Bengal: each of the three Dravidian tongues had its own alphabet. A change seemed essential to the civilization of India, and though to attempt to force one upon the people would be wrong, and must end in ludicrous failure, yet books in every living Indian language should be printed in Roman character, and left to make their own way.

Mr. W. L. Heeley maintained that alphabets, like constitutions, were developed by nature, and suited to the instincts of the several races which used them, and that it would be highly difficult, if not impossible, to impose a strange alphabet upon any race which had developed one by its own efforts. We have not yet obtained a scientific analysis of the circumstances under which alphabets had

been adopted; but he thought that the cases, which on a cursory view of the subject occurred to him, would support his belief. The Lord Bishop had referred to the change in the Hebrew alphabet made during the Babylonish captivity, but this was a mere change in the form of letters, like our English change from German text to the present Roman hand; no letters were added or omitted; and the change was not proved to be derived from any foreign, or non-Semitic, influence. Instances like the adoption of the Arabic alphabet by the Turks were cases where a totally illiterate people without an alphabet (for the Turanians of Central Asia do not seem to have developed one,) adopted that of the race most allied to them by politics and religion; and the case of the Magyars was a similar one. That, however, the natives of India took most kindly to the indigenous, or Nagri, alphabet, of which the various alphabets in use are modifications, might be proved in many ways, and among others by the non-success of the Mussulman rulers in introducing their own, or the Arabic, alphabet. Hindustani, though spoken almost all over India, was not the written language of any portion of India; only scholars and Court Amlah could write the Arabic character, and, for the purposes of common life, the native alphabet was preferred even when, as among many of the Bengali Mussulmans, the literature was composed in a *patois* which had more Arabic and Persian words than Sanscrit words. The attempt, therefore, to apply to Hindustan the English alphabet was not likely to succeed. Persons who would not learn the Arabic alphabet would naturally write in Nagri, or one of its derivations. He could not agree in the conclusion to which both Captain Lees and the Lord Bishop had arrived, that, in case of non-Arian languages of limited extent which had not a vocabulary of their own, the English alphabet might be used with advantage, and he instanced the Khonds, hill-tribes of Orissa, who were surrounded by, and mixed up with, an Ooriah population speaking an Arian language with an alphabet derived from the Sanscrit. A Mission had recently been established there, and the missionaries had very properly, in his opinion, printed their Khond books in the Ooriah alphabet. What was the object of introducing the English alphabet? Not that it was more perfect;—the Ooriah alphabet was a far more perfect and useful and better arranged one, and quite as easy to read. The object was to put them *en rapport* with civilization, to facilitate their

acquisition of English. But when are the Khonds likely to want English? Certainly not before the Oorials want it; and the knowledge of the Ooriah alphabets would be practically useful to them every day. They will seldom see Europeans. The very work of the mission, and of teaching, will be carried on mainly by Ooriah ministers and catechists; and the business of daily life, the buying and selling, is altogether conducted by Oorials. It is clear that in this case the advantages of the Ooriah alphabet outweighed those of the English, and it would probably be found the same, on the most superficial view, in other similar cases. Broadly, it appeared that the civilization of these scattered and insignificant tribes would be better attained by bringing them up to the level of civilization enjoyed by surrounding districts, than by attempting anything higher; what we wanted was not to Europeanize parts of India, but to weld the whole into a compact mass, to give it that homogeneity, the absence of which so much weakens all exertions either of the teacher or legislator for the benefit of the people. If a common alphabet could effect this to any extent, that alphabet must be the one which the *indoles* of the natives of the country had worked out for itself, and which could more easily be learnt than any other, besides being in itself true, perfect, and better than any alphabet we could give them. Mr. Heeley concluded by appealing to Captain Lees for corroboration of the views expressed by him with regard to the non-development of an indigenous alphabet among the Scythian races.

Captain Lees said he was glad the Bishop had favoured the meeting with an expression of his opinion on this question, in which it was known he took a deep interest. He had listened with great interest to his Lordship's remarks, and while he concurred in much that he had said, he thought that much in which he could not concur might be reconciled with the views enunciated in the paper just read. The object his Lordship and those who were of his opinion had in view was universality, and now he thought that sufficient consideration had not been given to the widely-spread area over which the Hindustani language was used, a range of country extending from Peshawur on the north to Cape Comorin on the south. If we applied the Roman alphabet to this one language, no doubt it would familiarize a very large portion of the people of India with these characters. But to do even that, would be a *magnum opus*. It would, moreover, at the

outset at least, be experimental ; and it must be admitted that in all experimental undertakings, however good grounds we may have to hope for success, we must not be unprepared for failure. Now, if we were suddenly to print books in all the languages of India in the Roman characters, and introduce them into all our villages and vernacular schools, and the experiment were to fail—*i. e.* if the people generally were to refuse to adopt these characters—there can be no doubt that we should have succeeded in doing a very great mischief. In dealing with Hindustani alone, we tread on sure ground. We make the experiment with some prospect of success, while we reduce the risk of danger to a minimum. It must be recollected however, that the present movement is wholly an outside one. The natives of this country, for whose languages alphabets have been perfected, do not ask for any change. They do not want it. We find the number of these alphabets inconvenient, and we wish to change them all for our own ; but we are aliens, and the question is, should such a point be decided by foreigners ? In regard to the question asked by Mr. Heeley, I am not prepared at present to enter on a review of the progressive development of writing amongst the Scythians. The early history of the colonies of these races who entered India, is involved in much obscurity, from which it will probably never be unveiled. Their earliest records are to be found on the coins of Bactriana subsequent to the downfall of the Greek kingdom. They are written in two characters—corrupt Greek and Bactrian, merging later into the Indian and Sanscrit alphabet ; and as both these alphabets were foreign, it would appear that the early Scythians had no alphabet of their own. The Thibetan alphabet is borrowed from the Indian, and is comparatively modern. The irruption of the Osmanli Turks into Europe did not take place until long after they had embraced Mahomedanism. That people had changed their alphabets, as well as their languages, there can, however, be no question. In fact, if we trace the history of the progressive development of alphabets, we find it to be one continued series of changes, and it is to the variety of directions in which these changes and developments have been made, that we owe the multiplicity of alphabets we now possess, as I have explained in my paper. Nations with imperfect alphabets have never objected to change them. On the contrary, they have shown a tendency to elaborate, improve, and

perfect them, as their ideas and their languages became enlarged. In short, in the East, Mr. Hceley is quite correct in speaking of the indigenous *growth* of alphabets, for undoubtedly in India alphabets have grown with the languages they belong to, and to them they have a prescriptive right. I do not think then that it would be difficult to reconcile the extreme views of either of the speakers with the more moderate and mean position I have taken up.

The Librarian submitted a report of the accessions to the Library since the meeting held in February last.

LIBRARY.

The following additions have been made to the Library since the meeting held in February last.

Presentations.

• * * *The names of donors in capitals.*

Les Animaux ; extrait du Tuhfat Ikhwan us Safa.—M. GARCIN DE TASSY.

Cours d' Hindoustani for December 1863.—THE SAME.

Tables of Heights in Sind, the Punjab, N. W. Provinces and Central India determined by the G. T. Survey of India.—THE GOVERNMENT OF INDIA.

Catalogue Raisonnée of Oriental MSS. in the Library of the (late) College of Fort Saint George, now in the charge of the Board of Examiners ; by the Rev. W. Taylor, Vols. II. and III.—THE BENGAL GOVERNMENT.

Westwood's Oriental Entomology.—LT. R. C. BEAVAN.

History of the Reigning Family of Lahore with some account of the Jummoo Rajahs—By Major G. C. Smyth.—THE AUTHOR.

The Dáya Bhága.—BABU P. C. TAGORE.

A Treatise on the chronology of Sinaitic monuments, by His Highness Hekekeyan Bey.—THE AUTHOR.

History of Hyder Ali and Tippoo Sultan.—PRINCE GHOLAM MAHOMMED.

Brief History of Ancient and Modern India from the earliest period of antiquity to the termination of the late Mahratta war.—**THE SAME.**

Natuurkundig Tidschrift voor Nederlandsch Indie, Vol. XXVI.—**THE SOCIETY.**

Illustrations of the Meteorology of India and High Asia, by H. de Schlagintweit.—**THE BENGAL GOVERNMENT.**

Ditto ditto.—**THE INSPECTOR GENERAL OF HOSPITALS.**

Official Hand-book of the Punjab Exhibition.—**THE PUNJAB GOVERNMENT.**

A Collection of Treaties, Engagements, Sunnuds, relating to India and the neighbouring countries, Vol. V., compiled by C. U. Aitchison, Esq.—**THE GOVERNMENT OF INDIA.**

Indische Studien, Vol. VIII.—**THE EDITOR.**

On the identification of the Acanthaceæ of the Linnean Herbarium, by T. Anderson, Esq., M. D.—**THE AUTHOR.**

An enumeration of the species of Acanthaceæ from the Continent of Africa by T. Anderson, Esq., M. D.—**THE SAME.**

Le Trésor des chartes d' Arménie ou Cartulaire de la Chancellerie Royale des Roupéniens, Par Victor Langlois.—**J. AVDALL, ESQ.**

Memoires de l' Academie Impériale des Sciences de St. Petersburg, Tome IV. Nos. 10 and 11.—**THE ACADEMY.**

Bulletin de l' Academie Impériale des Sciences de St. Petersburg, Vol. IV. Nos. 7 to 9, and Vol. V. Nos. 1 and 2.—**THE SAME.**

Annales Musei Botanici Lugduno Batavi, edited by F. A. Guil. Miguel, Tome I. Fasc. 1, 2 and 3.—**THE LUGDUNO BATAVIAN ACADEMY.**

Memoirs of the American Academy of Arts and Sciences, New Series, Vol. VIII. Parts 1 and 2.—**THE ACADEMY.**

Proceedings of the American Academy of Arts and Sciences, Vol. V. pages 241—457, &c., Vol. VI. pp. 1—96.—**THE ACADEMY.**

Proceedings of the Royal Geographical Society, Vol. VIII. Nos. 1, 2 and 3.—**THE SOCIETY.**

Proceedings of the Natural History Society of Dublin, Vol. IV. Part 1.—**THE SOCIETY.**

Report of the Proceedings of the Archæological Surveyor to the Government of India for 1862-63.—**THE GOVERNMENT OF INDIA.**

Annual Report on the administration of the Coorg districts for 1862-63.—THE BENGAL GOVERNMENT.

Annual Report on the administration of Mysore for 1862-63.—THE SAME.

Report of a Meeting of the Bethune Society held in honor of Dr. Duff.—BABOO RAMCHUNDER MITTER.

Transactions of the Entomological Society of New South Wales, Vol. I. Part 2.—THE SOCIETY.

The Anthropological Review and Journal, Vol. I. Nos. 1 to 3, and Vol. II. No. 4.—THE ANTHROPOLOGICAL SOCIETY.

Toungoo News Sheet, Vol. I. Nos. 1 to 3.—THE REV. F. MASON.

Professional papers on Indian Engineering, Vol. I. Nos. 1 and 2.—MAJOR J. G. MEDLEY.

Purāna Sangraha, Parts 12 and 13.—BABU KALI PROSONNO SINGH.

Selections from the Records of the Government of India, P. W. Department, No. 40.—THE GOVERNMENT OF INDIA.

Report on the result of the administration of the Salt Department for 1862-63.—THE BENGAL GOVERNMENT.

The Chinese and Japanese Repository of facts and events in Science, History and Arts, relating to Eastern Asia, Vol. I. Nos. 1 to 5.—PROFESSOR SUMMERS.

Address delivered at the Anniversary Meeting of the Geological Society of London on the 19th February, 1864, by Professor Ramsay F. R. S.—THE AUTHOR.

Report of the Committee of the Bengal Chamber of Commerce from 1st November, 1863, to 30th April, 1864.—THE CHAMBER OF COMMERCE.

Instructions for taking Meteorological Observations, with tables, by Sir H. James.—COL. H. L. THUILLIER.

A Pali Grammar, by J. Alwis.—THE AUTHOR.

Eight years in Asia and Africa from 1846 to 1855, by J. J. Benjamin, Esq.—THE AUTHOR.

Bayan Maka Za Oolum, compiled by Saiyed Keramut Ali.—THE COMPILER.

Die Gedichte des Urua ibn Alward, herausgegeben, übersetzt und erläutert von T. Nöldeke.—THE EDITOR.

Catalogue annuel de la Librairie Francaise, by C. Reinwald.—THE COMPILER.

Catechism of the Shaiva Religion, Parts 5 and 6.—THE REV. T. FOULKES.

The Kusumánjali or Hindu Proof of the Existence of the Supreme Being, with a translation.—E. B. COWELL, Esq., M. A.

Bleeck's Spiegel's Avesta, the religious books of the Parsees.—THE EDITOR.

The tale of the battle of Padmanabham, with a Telugu translation.—A. L. CARLYLE, Esq.

Ovarium Britannicum—or an accurate delineation of 50 Figs. of British Bird's Eggs, by G. Graves, Esq.—THE SAME.

The Annals of Indian Administration, Vol. VIII. Part 1.—THE BENGAL GOVERNMENT.

Quarterly Journal of the Geological Society of London, Vol. XX. Part 1.—THE SOCIETY.

Journal of the Statistical Society of London, Vol. XXVI. Part 4, and Vol. XXVII. Part 1, with an Index to Vols. XVI—XXV.—THE SOCIETY.

Journal of the Agricultural and Horticultural Society of India, Vol. XIII. Part 2.—THE SOCIETY.

Jahrbuch der K. K. Geol. Reichsanstalt, Vol. XIII. No. 3.—THE SOCIETY.

Journal Asiatique, Sixieme Série, Vol. II. Nos. 4 to 7, and Vol. III. Nos. 8 and 9.—THE ASIATIC SOCIETY OF PARIS.

Proceedings of the Royal Society of London, Nos. 58 to 63.—THE SOCIETY.

Rahasya Sandarbha, Vol. I. Nos. 10, 11, 12 and 13.—THE CALCUTTA SCHOOL BOOK SOCIETY.

Bijdragen tot de Taal-land en Volkenkunde Nederlandsch Indie, Vol. VI. Stuk 3.—THE UNIVERSITY OF LEYDEN.

The Calcutta Christian Observer, Vol XXV. Nos. 290 to 294.—THE EDITOR.

Journal of the Academy of Natural Sciences of Philadelphia, Vol. V. Part 4.—THE ACADEMY.

Proceedings of the Same Nos. 3 to 7 of 1863.—THE SAME.

Memoirs of the Geological Survey of India (*Palæontologia Indica*) Vol. III. Part 3.—THE GOVERNMENT OF INDIA.

Another copy of the Same.—THE GOVERNMENT OF BENGAL.

Another copy.—THE SUPERINTENDENT GEOLOGICAL MUSEUM.

Memoirs of the Geological Survey of India, Vol. III. Part 2, and Vol. IV. Part 2.—THE SAME.

Proceedings of the Scientific Society of Ghazipur, Nos. 2 to 4 of 1864.—THE SOCIETY.

The Oriental Christian Spectator, Vol. IV. Nos. 5 to 8.—THE EDITOR.

The Oriental Baptist, Vol. XVII. Nos. 201, 202 and 203, Vol. XVIII. Nos. 205 to 209.—THE EDITOR.

The Calcutta Review, Nos. 76 and 77.—THE EDITOR.

Selections from the Records of the Bengal Government, No. 39, Part 2.—THE BENGAL GOVERNMENT.

Selections from the Records of the Madras Government, No. 76 for 1862-63, with a map.—THE GOVERNMENT OF MADRAS.

Returns showing the operations of the Income Tax Act in the N. W. Provinces for 1861-62.—THE GOVERNMENT N. W. PROVINCES.

Proceedings of the Royal Institution of Great Britain, Vol. IV. Parts 1 and 2.—THE ROYAL INSTITUTION.

List of the members and officers and Professors of the Royal Institution of Great Britain for 1863.—THE SAME.

Calcutta Christian Intelligencer, Vol. XXXIX. Parts 1 to 3, 4 and 6.—THE EDITOR.

General Report on Public Instruction in the Lower Provinces of the Bengal Presidency with Appendices for 1862-63.—THE DIRECTOR OF PUBLIC INSTRUCTION.

Selections from the Records of the Bombay Government, No. 79.—THE BOMBAY GOVERNMENT.

Proceedings of the Zoological Society of London, Part 2 of 1863.—THE SOCIETY.

Journal of the Royal Geographical Society of London, Vol. XXXII.—THE SOCIETY.

Journal of the Royal Asiatic Society of Great Britain and Ireland Vol. XX. Parts 3 and 4.—THE SOCIETY.

A list of the Fellows, annual Subscribers and Honorary and Corresponding members of the Zoological Society, London, for 1863.—THE SOCIETY.

Journal of the Chemical Society of London, 2nd Series, Vol. I. Nos. for October, November and December, 1863, with a Supplement for Dec. and Vol. II. Nos. for January, February and March, 1864.—THE SOCIETY.

Journal of Sacred Literature and Biblical Record, New Series, Vol. IV. No. 8 and Vol. V. No. 9.—THE EDITOR.

Report of the Pulni Mountains, to accompany the Series of sketches by Lieutenant-Colonel D. Hamilton.—THE MADRAS GOVT.

Verhandlungen der Zoologisch-Botanischen Gesellschaft, Wien—Vol. XIII.—THE SOCIETY.

Monographie der Oestriden von Friedrich Brauer.—THE ZOOLOGICO-BOTANIC SOCIETY OF VIENNA.

Jahrbuch der Kaiserlich-Königlichen Geologischen Reichsanstalt, XIII. Band. No. 4.—THE IMPERIAL MINERAL CABINET OF VIENNA.

Indische Studien, herausgegeben von Dr. Albrecht Weber. 8er Band.—THE EDITOR.

Zeitschrift der Deutschen Morgenländischen Gesellschaft, Band XVIII. Parts 1 and 2—THE SOCIETY.

Mjöltnir og Vadjra af C. A. Holmboe. *Pamphlet*.—THE AUTHOR.

Om Ortug eller Tola, en skandinavisk og Indisk Vægtøenhed af Professor Holmboe—*Pamphlet*.—THE SAME.

Amuletter og om stormænds Begravelse af C. A. Holmboe—*Pamphlet*.—THE SAME.

Om Haugelys af C. A. Holmboe—*Pamphlet*.—THE SAME.

Resultate Magnetischer, Astronomischer und Meteorologischer Beobachtungen auf einer Reise nach dem Ostlichen Sibirien in den Jahren 1828-1830 von Professor Christoph Hansteen und Lieutenant Due.—THE UNIVERSITY OF CHRISTIANIA.

Aegyptische Chronologie: Ein Kritischer Versuch von. J. Lieblein.—THE SAME.

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THE SAME.

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THE SAME.

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SAME.

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tember, 1861.—THE SAME.

Norske Vægtlodder fra Fjortende Aarhundrede beskaevne af C. A.
Holmboe.—THE SAME.

Peter Andreas Munch ved Paul Botten Hansen.—THE SAME.

Taxidermi—*Pamphlet*.—THE SAME.

Aperçu des différentes méthodes de traitement employées à l'hôpital
de l'Université de Christiania contre la Syphilis constitutionnelle, par
J. L. Bidekap.—THE SAME.

Committee—Beretning Angaaende Syphilisationen.—THE SAME.

Statistiske Efterretninger om Christiania Kathedralskole for
skoleaarene 184 $\frac{8}{9}$ til 185 $\frac{2}{3}$.—THE SAME.

En storre Bibelhistorie. Det Nye Testament.—THE SAME.

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Aaret, 1860—Afgiven af Departementet for det Indre.—THE SAME.

Tabeller over de Spedalske i Norge i Aaret, 1861, 1862.—THE
SAME.

Exchanges.

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ruary, March and April, 1864.

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Nos. 177 and 178, Vol. XXVII. Nos. 179 to 183.

Purchases.

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and Vol. XIII. Nos. 73 to 77.

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LVII. and Nos. 1 to 17 of Vol. LVIII.

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III. No. 12.

Journal des Savants, for Nov. and December, 1863 and for January,
February, March and April, 1864.

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Atlas Ichthyologique des Indes Orientales Néerlandaises, Livraisons 11, 12 and 13, by M. P. Bleeker.

Indische Studien, Vol. VIII.

The Arabian Nights, translated by E. W. Lane ; 3 vols.

Standard Alphabet, by C. R. Lepsius.

Crania Britannica, by J. B. Davis. Parts 1 to 5.

Orient und Occident, Vol. II. Part 3. By T. Benfey.

Hercule et Cacus, étude de Mythologie comparée, Par M. Breal.

Hewitson's Exotic Butterflies, parts 49 and 50.

List of the Specimens of Lepidopterous Insects in the Collection of the British Museum, Parts 21 to 26, by E. Gray.

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Amara Kosha, *Sanskrit MS.*

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Apastambha Sutras, ditto.

The Rock-cut Temples of India. By J. Fergusson.

Dictionnaire Classique ; Sanscrit—Francaise, Parts 1 and 2, by Burnouf.

Gould's Birds of Asia, Part 16.

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Dictionnaire Turc—Arabe—Persan—Turkisch—Arabisch—Persisches.

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The Kamil of El-Mubarrad, Part I. By W. Wright.

Deutsche verbesserte Uebersetzung der Bücher des Zoroaster. Erster Theil Zen-dawasta (das "Leben-Gebende!") von Dr. Prof. Ignatius Pietraszewski.

Memoires D'Histoire et de Géographie Orientales; (Memoire sur le Fotouho's—Scham) par M. J. De Goeje, No. 2.

Noms Indigènes d'un Choix de plantes du Japon et de la Chine, Par MM. J. Hoffman et H. Schultes.

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Gia-Dinh-Thung-Chi. Histoire et description de la Basse Cochinchine, Par G. Aubaret.

Memoire sur la partie Méridionale de L'Asie Centrale, par Nicolas de Khanikoff.

LÁL GOPÁL DUTT.

July 6th, 1864. •

FOR AUGUST, 1864.

The adjourned Monthly General Meeting of the Asiatic Society of Bengal was held on the 11th instant.

CAPTAIN W. N. LEES, LL. D., Vice-President, in the Chair.

The Proceedings of the last meeting were read and confirmed.

Presentations were announced—

1. From the Secretary of the Benares Debating Club, a copy of the Rev. W. Hooper's Lecture on Letters, lately delivered before the Club.

2. From Baboo Jwalanauth Pundit, a collection of Persian and Urdu MSS.

3. From C. Horne, Esq., C. S., two skins of *Paradoxurus*.

4. From Lieutenant R. C. Beavan, a collection of Indian Lepidoptera (*Papilionidæ* and *Tinæ*) a collection of eggs of Indian birds; and two skins of the Paradise Fly-catcher.

5. From R. D. Stewart, Esq., two young bats in spirit.

6. From A. Grote, Esq., a Kangaroo.

7. From Lieutenant C. S. Pratt, of the 31st Punjaub N. I.,

several Cossyah swords and arrows captured during the late disturbances in those hills.

8. From Colonel C. S. Guthrie, specimens of a peculiar kind of Ivory called "Shermie," used in the Upper Provinces of India, in the manufacture of dagger handles, &c., &c., and said by those that deal in it, to be brought from Russia.

9. From A. C. L. Carlyle, Esq., Officiating Curator, specimens of Plumbago and Manganese Ore, obtained by him from Pedda Kada Kondah in the Zemindary of the Rajah of Vizianagaram, Northern Circars.

The Curator exhibited the following Zoological specimens.—A *Varanus* and two small bittern-like herons viz., a variety of *Ardeola Malaccensis* and a specimen of *Ardeola cinnamomea* shot by him for the Society; a large *Monitor* shot near the Salt Lake Canal; specimens of certain snakes obtained by him, viz., *Tropidonotus stolatus*, *Tropidonotus schistosus*, and *Tropidonotus umbratus*; a specimen of a species of fossil *Clypeaster* found by him in the desert near the Great Pyramid; and specimens of some shells collected by him in the Sunderbuns.

The Curator reported that he had procured from Mutlah an enormous Crocodile, sixteen and half feet in length, for the Society, through the kindness of J. Sturmer, Esq., and H. B. Farr, Esq., of the Mutlah Railway Company, to whom the thanks of the Society are due. The Crocodile is being made into a skeleton specimen for the Museum.

Mr. Blanford proposed that the special thanks of the Society be given to the above named gentlemen; which proposition was put to the vote of the meeting and carried unanimously.

A letter from D. M. Gardener, Esq., C. S., announcing his withdrawal from the Society, was recorded.

The following gentlemen, duly proposed at the last meeting were balloted for and elected Ordinary members:—

Dr. C. R. Francis, C. B. Garrett, Esq., C. S., W. Swinhoe, Esq., and Rev. J. Ebenezer Marks.

The following gentlemen were named for ballot as Ordinary Members at the next meeting:—

J. Beames, Esq., C. S., Collector and Magistrate of Purneah, proposed by Lieutenant-Colonel F. P. Layard, seconded by N. S. Alexander, Esq.

The Hon'ble Elphinstone Jackson, proposed by W. L. Heeley, Esq., seconded by H. F. Blanford, Esq.

Baboo Taruck Chunder Sircar, proposed by Baboo Jadava Krishna Singh, seconded by Captain W. N. Lees.

Captain E. B. Sladen, Madras Staff Corps, proposed by H. F. Blanford, Esq., seconded by W. L. Heeley, Esq.

R. Jardine, Esq., C. S., proposed by W. L. Heeley, Esq., seconded by Baboo Rajendralal Mitra.

The Secretary read the following letter from Lieutenant C. A. Sim, R. E., to H. Rivett Carnac, Esq., Assistant Secretary to the Chief Commissioner of the Central Provinces, relating to the fossil amphibian lately presented to the Society's Museum, a copy of which letter had been forwarded by the latter to the Society.

From Lieut. C. A. SIM, Royal Engineers, to HARRY RIVETT CARNAC, Esq., Assistant Secretary to the Chief Commissioner, Central Provinces.

Gondwarra, dated 23rd May, 1864.

SIR,—In reference to your demi-official communication of the 30th March last, I have the honour to state, for the information of the Chief Commissioner, that, in company with Dr. Orr, I again visited, on the 21st instant, the spot where the Saurian was found in last July.

I then accurately marked the position in the geological map which you forwarded to me: so I need not again revert to the subject of site. The Nandiya stream has been now examined for some distance on both directions of the Saurian site, but I regret to say that no new fossil has been discovered. The rocks in the bed of the stream are mostly of a very hard sandstone; all appear to have been washed down, and to be continually changing their position. The strike or dip of some of these layers of sandstone was observed to be as much as 30° to the north, whilst the dip of the rocks in the base of the neighbouring hills is but 3° or 4° to the same point of the compass. Occasionally, nodules of basalt and layers of shale are met with in the bed of the stream, and this is easily accounted for when the rising ground in the immediate vicinity is examined, for the hills are nearly all capped with Trap, having a substratum of sandstone with heads dipping 3° or 4° to the north.

The presence, then in the bed of the river of both trap and sandstone boulders of a similar formation to that of the neighbouring

hills, leads to the conclusion that the Saurian stone is not a rock

“in situ,” ut evidently a loose block washed down from a position perhaps higher up the stream, perhaps from the base of the hills in the vicinity. The dip of the river stones is so various that all those at present visible have evidently fallen from above, and are, in all probability, of a recent displacement. The character of the rocks in the immediate vicinity may be described as trap overlying sandstone, the latter very hard, and with heads dipping 3° or 4° to the north.

Trusting that this information may be a sufficient answer to your demi-official communication previously quoted.

I have the honor, &c.,

(Sd.) C. A. SIM, *Lieutenant,*
Royal Engineers.

(True Copy)

(Sd.) H. RIVETT CARNAC,
Assistant-Secretary, Central Provinces.

The Secretary read the following correspondence that had passed, between the Society and the Government of India on the subject of the proposed transfer of their Museum to Government.

From the Secretary to the Asiatic Society of Bengal, To E. C. BAYLEY, Esq., Secretary to the Government of India, Home Department.

Asiatic Society's Rooms, Calcutta, 5th April, 1864.

SIR,—With reference to the previous correspondence on the proposed transfer of the Asiatic Society's collections to Government, printed copies of which are hereto appended, I am instructed to inform you that the Council has now received full powers from the Society to enter upon final arrangements with Government on the basis recognised in your letter No. 7622 of the 5th December, 1863.

It is deemed highly desirable by the Council that these arrangements should be entered upon with the least practicable delay, inasmuch, as pending the result of the present correspondence, the Council has deferred the appointment of a properly qualified Curator, in succession to their late Curator, Mr. Blyth, and the collections although as far as possible cared for in all that regards their preservation and display, and continually increased by donation and purchase as heretofore, are not rendered subservient to the extension of scientific knowledge in the same degree that they would be under a skilled Zoologist.

In accordance with the provision of Rules I. and III. as submitted

in the late Secretary's letter of the 18th June, 1862, the Council will be prepared to make over to a Board of Trustees, to be incorporated by an Act of the Legislature, the management, arrangement and disposal of the collections, together with the right of free access to those portions of the Society's premises which are now devoted to the Museum, until such time as the new Museum Building shall be ready for the reception of the collections. The constitution of the Board of Trustees will therefore be a necessary preliminary to further steps in the transfer.

As, however, some delay must necessarily intervene previous to the completion of the transfer, and as a similar delay must be incurred in the selection and appointment of a qualified Curator to the Museum, it appears highly desirable that the two measures should proceed simultaneously in order that the Museum be placed as soon as may be under the immediate charge of a paid officer. It has been long felt that the extent and variety of the collections are such as to render it impossible for one man to perform the necessary scientific work in connection therewith, and at the same time to undertake their preservation, the disposal and exchange of duplicates, &c., and to carry on the business and mechanical duties of the Museum.

The Society's collections are not indeed at present, of such extent as to require the entire services of two specially educated Zoologists, although such a contingency may be fairly contemplated at no distant period. But the Council would strongly recommend that provision be made for one head Curator or Museum Superintendent of high scientific attainments, and for an Assistant Curator such as may be obtained in this country or in Europe on a moderate salary.

The Society is at present in receipt of a total sum of Rs. 500 per mensem from Government, for the support and preservation of the Museum: this sum will lapse to Government with the transfer of the Society's collection. Should His Excellency the Governor-General in Council think it desirable to invite the Society's recommendations with regard to the appointment of and pecuniary provision for a Curator, I am desired to state that the Council will have much pleasure in submitting its views for His Excellency's consideration.

I have, &c.,

(Sd.) H. F. BLANFORD,

Secy., Asiatic Society.

From E. C. BAYLEY, Esq., Secretary to the Government of India,
To H. F. BLANFORD, Esq., Secy. to the Asiatic Society of Bengal.

Dated Simla, the 8th July, 1864.

SIR,—I am directed to acknowledge the receipt of your letter, No. Home Department. 177, dated the 5th of April last, and to state that the question of the proposed transfer of the Asiatic Society's Museum to the Government of India, with the view of forming an Imperial Museum, has been submitted for the final sanction of Her Majesty's Government.

2. The Secretary of State has been solicited to select and send out a Curator during the ensuing cold season. The Governor-General in Council is of opinion that until the arrival of that officer in Calcutta, nothing will be gained by the transfer of the Society's collections to Government. The present grant from Government being continued, the Society should make intermediately the best arrangements possible for the preservation of their collections. The exhibition of these should for the present be quite a secondary object.

3. The appointment of Trustees under the contemplated Act will be made on the arrival of the Curator.

4. The necessary steps will be taken in the Public Works Department for the construction of a suitable building for the Imperial Museum. Endeavours will be made to ensure that the building shall be commenced in 1865, and it will, it is hoped, be completed within two or three years.

I have, &c.,

(Sd.) E. C. BAYLEY,

Secy. to the Govt. of India.

The report of the Council appointing Messrs. J. Strachey and J. Geoghegan, members of their body, was confirmed.

The Chairman then rose and said—

“It is my pleasing duty to announce to the Society this evening the completion of another volume of the very valuable Persian series we are now publishing in the *Bibliotheca Indica*, and as some account of our progress, and the plan that has been sketched out for us to follow, will be interesting not only to the Society but to Oriental scholars in Europe, I have prepared chiefly from a minute in the Philological Committee, a short memorandum on the subject.

"The present object of the Society in regard to the Persian series of the Bibliotheca Indica, is to aid in working out an idea, which originated with the late distinguished Sir Henry Elliot, viz., to place in the hands of the future historian, the best original materials for compiling a history of this country, and the plan proposed for accomplishing our task is, to publish texts of the most trustworthy authors, giving the preference, when possible, to writers contemporary with the events their histories chronicle.

"I. In this view, we have already published that portion of *Abul-Fazl Baihaki's Tarikh-i al-i Soboktikin* which contains the biography of Mas'ud, the son of Mahmud* of Ghazni; and it should be our endeavour, I think, to complete this period from other sources; because the kings of Ghazni have exercised so material an influence on the progress of events in India, and the affairs of the two countries are so interwoven, that any history of India, without an account of the rise, progress, and decline of the Ghazni dynasty, would certainly be incomplete.

"I am not prepared to say that materials at present exist and are available for satisfactorily fulfilling this portion of our task, which embraces a period of about 200 years, commencing with Nasir al-din Soboktikin, and ending with Khosraw Malik, who died A. H. 583.

"II. The succeeding or second period of the History of India, treats of the Afghan dynasties, including the Ghori, the Slave, the Khilji and Lodhi kings. It commenced with M'izz al-din Mohammad Ibn i Sam Ghori, and concludes with Soltan Ibrahim Ibn i Sakandar Lodhi; or, including the interruption caused by the invasions of the Chaghatais, may be carried down to Mohammad Adil, in the year A. H. 963; in which year also Homayun died.

"In furtherance of our object in regard to this period, we have already published the history of Zia al-din Barni, which chronicles the reigns of eight kings of Delhi, from Ghaias al-din Balban, to the 6th year of the reign of Firoz Shah, a period of 92 years. Zia al-din took up his narrative of events from the point where the author of the *Tabaqat i Nasiree* left off.

* The poet Onsari, a contemporary of Mahmud and the great Firdawsi, wrote Mahmud's life, and copies of the book were extant in India a century ago. Whether a copy exists anywhere now or not, I do not know. It would be most valuable for the history of this period.

"The *Tabaqât i Násiree* is a general history, compiled by Minháj ol-dín Jawzjáni. It commences with the birth of Adam, and concludes with the biography of Násir ol-dín Mahmúd b-Shams ol-dín Altimash, the eighth king of Delhi of the Ghori dynasty.

"It must be evident that that portion of Minháj ol-dín's work which treats of ancient history, is of no value for illustrating the history of Mohammadan India. The account he himself gives of this part of his history is as follows :—

"He found, he says, a tabular chronicle compiled by the Imám Mohammad Ali Abu l-Kásim Imádi, in the time of Násir ol-dín Soboktikín, containing in a very concise form, some account of the prophets, the early and later Khalífahs, and something of the life of Násir ol-dín Soboktikín. This he desired to enlarge ; and by giving a more extended account of the kings of Arabia and Persia, including the Tobbas of Yemen, the kings of Himyar ; the Khalífahs, the Búyahs, Táhiryán, Saffáryán, Samáníyán, Saljúkyán, and Rúmyán, so make a complete history.

"But, for this portion of *general* history, we cannot expect to learn anything very new or instructive from Minháj ol-dín ; for, we have older, and better, and more numerous, authorities than those he used ; and many of these works have been already printed and published.

"There is, however, a portion of his history which is of great value for our purpose, viz. : that which contains the chronicle of his own times, commencing with the Ghori dynasty, (of the Royal House of which he was himself a *protégé*), and concluding with Násir ol-dín Mahmúd b-Soltán Altimash. Of the contents of the work, the late Mr. Morley in his catalogue, gave a brief outline : and from the examination I made of the book, his remarks appeared to convey an accurate impression of its value : of the propriety then, of our publishing the portion mentioned, there could not, I think, be a question.

"It might be thought that this author's account of the Kings of the house of Násir ol-dín Soboktikín (in whose time, and by whose order, the chronicle on which Minháj ol-dín professes to have based his account of this period was compiled) would be valuable. But it appears to be very meagre. The reigns of three or four kings, are sometimes discussed in half the same number of pages, three only being allotted to Mahmud the great, and his twelve invasions of India.

“What is related, however, is doubtless taken from the authorities considered most trustworthy at that early period—authorities some of which are no longer extant; and it will be interesting and satisfactory to this Society to hear that the author supports their opinion of Baihaki as a historian, for he opens his account of this period in the following words: ‘The Imám Abu l-Fazl Baihaki relates as follows;’ and quotes Baihaki often, in preference to Mohammad Ali Abu l-Kásim Imádi, the compiler of the court chronicle and historian of the time, thus establishing, that he had in his possession the last portion of this valuable history, and leaving fair grounds for us to conclude that he consulted it, as the best authority then extant, for the history of the early portion of this period.

“As it was a matter of serious doubt whether we could obtain full materials for illustrating satisfactorily, the history of this period; and as under any circumstances, Minháj ol-dín’s brief sketch appeared valuable as a correct index of the truth of other works, our edition of the *Tabaqát i-Násir ol-dín* commences from the rise of the Ghaznavide dynasty.

“This work we have now completed, and it forms the third volume of those very valuable histories we have published within the last few years.

“III. The third period of the history of the Mohammadan Kings of India, may be said to commence with the reign of Akbar, for though Babar and Humayoon are numbered amongst the kings of Hindustan by most Mohammadan and all European Historians, it cannot be said that either succeeded in founding a dynasty or in consolidating an Empire.

“In fulfilment of our object in regard to this period, we are now about to publish the *Muntakhâb al-Tawárikh* or the *Tarikh i Badáoni* and it is already in the Press. We have three MSS. and copies of the *Tarikh i Nizâmi* and the *Tabaqat i Akbari*, from which the author abridged a large portion of his work. This work is divided into three parts: (1.) The lives and times of the Kings prior to the reign of Akbar; (2) the life and time of Akbar himself; (3) Biographies of the learned and pious men who were contemporary with Akbar; and as giving us the character of the great king, from a different point of view to that of all other historians of the day, this history has a special value for that period.

“The history of the greater portion of the earlier periods we shall already have placed in the hands of the public, in the histories of Minhāj al-Din and Zīā al-Barni, far earlier and possibly far better sources of historic evidence than those consulted by Abd al-Qadir i Badāoni : we have thought it therefore undesirable to go over the same ground while the history of other periods remained uncompleted. I think it well worth consideration, however, whether in conjunction with this work, we should not publish in lieu thereof a certain portion of the *Tabaqāt i Akbari* which Abd al Qādir professes only to have abridged, and which all later historians have made such good use of. Sir H. Elliot in his *Mohammadan Historians*, says that “notwithstanding Ferishtah pronounces his history incomplete, he has borrowed from it very freely.” But Sir H. Elliot’s translator (for he generally marked his passages, and gave them to others who had more time for translating than he had,) has misinterpreted the passage, for what Ferishtah does say, has quite the opposite sense. He says “of all the Histories of Hindustan that have come into my hands, I have not found a single one complete, *except* the History of Nizām al-Din Ahmad i-Nakhsabi, meaning this “*Tabāqāt*,” the only thing wanting according to Ferishtah, being the additional information which he himself possessed and which we may assume he supplied in his own large work.

“It would seem hardly fair, viewing the question of character from that even, disinterested and unbiassed point, and with that jealousy proper to the honest and truthful historian, to publish a history, the greatest value of which consists in ‘correcting by its prevalent tone of censure and disparagement the fulsome eulogium of the Akbar Namah,’ without, at the same time, supplying the panegyric; the more especially as I find in Badāoni’s history, abundant proof that his religious bigotry was such as to render it difficult for him to give an unbiassed and impartial sketch of the character, or to draw right conclusions from the actions of so tolerant a monarch as Akbar. No recommendation has yet been made on this subject to the Society but I hope soon to bring it forward.

“We will then have to consider the reigns of the three great successors of Akbar, Jahan-Gir, Shah-Jahan, and Aurang-Zeb, during which, including the reign of Akbar himself, the glory of the Mohammadan power in India may be said to have attained its zenith. But for this

and the fourth period which we may call the *decline* of the Mohamadan power, no arrangements have as yet been made.

“And here I may convey to the Society the gratifying intelligence which has reached me within the last few days from Mr. Grote, that Lady Elliot has at last placed in the hands of Mr. E. Thomas and our late Secretary, Professor Cowell, the whole of Sir Henry Elliot’s MSS. with a view to their being published by our Society, with the assistance which her Majesty’s Secretary of State in Council has so liberally offered us for that purpose, and that we shall thus have the means of conferring an inestimable boon on the Oriental World, and at the same time of erecting a noble and lasting monument to that accomplished scholar and distinguished member of our own body, will, I am certain, be most gratifying to all members of this Society who knew him when living, or who honour and respect his memory.”

Communications were received—

1. From Lieutenant R. C. Beavan, Revenue Survey;—A few remarks on the Tussah silkworm of Bengal.

2. From Baboo Gopinath Sen, an abstract of the hourly Meteorological Observations taken at the Surveyor General’s Office Observatory in May last.

3. From Bábu Rájendralála Mitra, on the origin of the Hindvi and its relation to the Urdu dialect.

After a few introductory remarks, the author, in this paper, takes a retrospective view of the principal changes which the Sanskrit has undergone in its transition to the modern vernaculars of India. The oldest vernacular, next to the Sanskrit, he says, was the *Gáthá* dialect, which prevailed at the time of Buddha’s death in the fifth century before the Christian era. This was followed by the Páli in the time of As’oka, Emperor of India, and it changed into the different Prá-kritas a little before the birth of Vikramáditya. Nothing is known of the north Indian vernaculars for a thousand years after this, until the time of Prithiráj of Kanouj in the tenth century, A. D. when the Hindvi became the vernacular of the most civilized portion of the Hindu race. The Hindvi has since that time undergone many changes and been divided into several dialects, but it is substantially one language, which, in its grammar, bears the closest analogy to the Sanskrit. This the author proves by a detailed analysis of the inflectional and conjugational terminations of the Hindvi as well as of the

auxiliary verbs, and pronouns. The Hindvi among the Mohammadans has become the Urdu. Its grammar is strictly Hindvi, but its vocables are partly Hindvi and partly Persian and Arabic. Thus the Urdu, which is also called the Hindustani, is nothing but Hindvi with a variable proportion of foreign elements. Inasmuch, however, as such foreign admixture does not alter the genealogical affinity of a language, the author contends that the Hindustáni is an Aryan and not a Semitic dialect. He next enters into an examination of the capability of the Roman characters to represent the phonology of the Hindvi and the Urdu, so as to supersede the use of the Native alphabets, and comes to the conclusion that the introduction of these characters into the Mofussil Courts, for the writing of Native dialects would be troublesome, impolitic, mischievous, and in no way conducive to the good of the people ;—troublesome, inasmuch as they cannot be used for the Native languages without a multitude of diacritical marks which, in Lepsius' Standard Alphabet, affect no less than 160 letters, and which can never be attended to in rapid writing ; impolitic, because it will create disaffection among the people who cannot but look upon the supersession of their ancient and superior alphabet by an imperfect one utterly unsuited to their wants, as highly oppressive ; and mischievous, because it would lead to frequent and serious mistakes in the judicial records of the country. The great want of India was a *lingua franca* and not an universal alphabet, which last, without a common language, would be a name and an idea, but of no possible practical good.

CAPTAIN LEES said :—" I did not anticipate it would be necessary for me to say anything this evening ; but as no other member of the Society has risen, I cannot allow the meeting to separate without an expression of opinion that our special thanks are due to Babu Rajendralala Mitra, for the excellent paper he has just read, on a very interesting subject. It will hardly be credited by the members of this Society, who may be supposed to be better informed on this subject than the outside public, that notwithstanding the Hindustance language is the *lingua franca* of India, and understood from Peshawur to Cape Comorin, and notwithstanding that the English have had India now for upwards of a century, the Essay that we have just heard read, is the first scientific paper of the kind that has ever been written in India. Dr. Trumpp's paper on the dialects of India, to

which the Babu has frequently referred in his lecture, may have been prepared in this country; on that point I am not informed, but it was published in a foreign journal and must be credited to the country to which that journal belongs. While expressing, however, my great satisfaction at the manner in which the subject has been handled, I must correct an error into which the Babu has fallen, in stating that I had said that the Hindvi or Hindi had no alphabet of its own. He has been led into this error probably by an imperfect recollection of what I said, as when he has had the benefit of reading my paper in print, he will see that what I did say has quite a contrary sense. The language which I said had no alphabet was the Hindustani, and the only difference between us appear to be that while he has considered the Hindvi or Hindi, the Hindustani, and the Urdu as one language, I have considered them as three languages. If it be admitted, what is asserted, that ninety per cent. of the vocables of Hindi are Sanscrit, which I think is probably true, I am not at all prepared to admit that in Urdu the proportion of Arabic and Persian words is only fifty per cent. In ancient Urdu, it was much less; but if the Babu had read the *Soroor i-Sultani* and many modern works published at Lucknow and Agra, he would find that the percentage of Indian words in them is quite as few as the percentage of foreign words in Hindi. In short, it is so infinitesimal, that this element can hardly be recognised at all; and to such a language, I think the Deva Nagri Alphabet would be quite as inapplicable, as the Roman alphabet would be to Hindi. I think, moreover, that my learned friend has laid too much stress on the influence the origin of a language ought to have on the characters in which it is written. This, in my opinion, has very little to do with the question, as alphabets in all countries of the west have been children of adoption, foreign to the countries and the languages which have adopted them. Turning again to the more immediate subject of the lecture, I am quite prepared to admit, that the balance of evidence in regard to the grammatical structure of Hindi, in common with the other Vernacular dialects of the Upper half of India, is strongly in favour of its having reached us through the Prakrit from the Sanskrit; but I do not think that the arguments used by Dr. Trumpp, nor yet the additional arguments that we have heard this evening, are sufficient to satisfy those who hold opposite views. It must be borne in mind that one of

the laws on which the dignity of a science is claimed for language, and on which Babu Rajendra Lal Mitra has based his strongest arguments, is that of phonetic corruption and grammatical regeneration, whereas it is impossible to arrive at a Sanskrit origin for the vernaculars of upper India, or for the Hindi dialect at least, without violating this law, and admitting grammatical or structural corruption as far more serious than anything that has taken place in phonetics. I do not at all wish to dispute the position, for, as I before said, the balance of evidence is certainly now in its favour; but the subject is not exhausted, and cannot be exhausted until we know more of the numerous dialects which are spoken by those rude people who inhabit the fastnesses of our central and frontier ranges of mountains. These dialects we may count almost by scores, but of the most of them we literally know nothing, and until we do, it is almost impossible to say what influence, (if any) they have exercised on the modern vernaculars, or even the older dialects of India. The learned lecturer has drawn attention in the opening of his paper, to the influence that special knowledge has had on discussions on this highly interesting subject, but in admitting the justness of his remarks, it becomes doubly necessary to guard against falling into the very error of which he has warned us. It is not very long ago, indeed the time is so short, that it will be in the memory of most here present, that all language was supposed to be of Semitic origin: our sacred Scriptures were written in Hebrew; our earliest history records were transmitted to us through that medium; all the dialects which are now current in the regions of its birth, and all those which existed for ages past and were lost, were asserted to have sprung from this most ancient of all languages. But little more than half a century ago, the researches of Sir William Jones, Colebrooke and other distinguished members of this Society, and addresses read from the very chair, which I now accidentally and unworthily fill, let in a flood of new light, which has since revolutionized European ideas on the subject of language; and it is not twenty, nay it is hardly fifteen years ago, that the antiquity claimed for Sanskrit was resolutely disputed by men of high attainment. For the last ten or fifteen years, however, everything has been Sanskrit; and the learned lecturer, in common with most others who have written on the subject, has traced all our Indian dialects back to that mother tongue. Now, at the present day, it is impos-

sible to refuse to admit that the Sanskrit language is of most remote origin—so remote, that with our present imperfect means of research, we find ourselves entirely at fault, if we attempt to elucidate its early history ; but though it is impossible to discover a new language like the Sanskrit, bearing in mind what has taken place, and looking to the rapid strides that within the last two or three years have been made in researches in the Zend language of the ancient books of the Parsees, and the arrow-headed Inscriptions in that language, we must not put out of mind the possibility of our one day being in a position to ask, “If all the modern dialects of India are based on the Sanskrit language, on what language is the Sanskrit itself based?” Nor in making this remark do I wish to cut anything off the age of the Sanskrit. At present, the language is altogether prehistoric, and may possibly remain so for ever. We cannot be blind to the fact, that speaking chronologically, we are first brought in contact with it not at the beginning but at the end of a period. The first date which we can grapple with anything like chronological precision, is that of Sakya Muni, and his era records,—not the dawn of a civilization such as we meet with in tracing the early history of many other nations we now call ancient, but a revolution and the overthrow of a religion, and a system which had existed certainly for very many centuries before, and in which he was not the first reformer. That the Vedas are long anterior to the period of Sakya Muni, his existence is sufficient proof. But beyond this isolated fact, besides the internal evidence furnished us by the Vedas themselves, we have little to guide us. The exact spot from whence the Aryans came is doubtful ; when they entered India we cannot even conjecture ; but if by the *rakshshases*, *dailyas* &c. spoken of in the *Mahabharat*, (which no doubt contains the history of a period much anterior to that of its composition,) and represented by the learned lecturer as being driven to take refuge in the rocks and caves of the hill fastnesses, and in a great measure exterminated, as have been the red Indians in North America, are to be understood the aborigines of India, it appears to me, that we shall have some difficulty in placing that remnant of the other colony which now inhabits the southern half of the Peninsula, and whose languages, the Tamil and Telinga, proclaim them to be of Scythian origin. It is generally admitted that these people reached India by the same route as the Aryan colony, and how they could

have travelled south, if the north had been already occupied by a strong and powerful race of Aryan people I do not quite comprehend. We have incontestable proof in late researches, that the religion of China went from Ceylon, and that India received nothing from the seaboard. But I must not detain the meeting longer. The subject now so ably handled by my friend Babu Rajendra Lal opens up questions of the deepest interest in Ethnological, Philological and Historical points of view, which instead of being exhausted, are comparatively fresh; and I trust that the interest excited by his paper will be such as to ensure us many more of them from other parts of India from persons as competent to deal with the difficulties with which they are surrounded as he is."

The Honourable G. Campbell had great pleasure in very heartily seconding the proposal for a vote of thanks to the learned member whose most interesting and instructive paper had been heard with so much profit. Not being himself a scientific linguist, he could not presume to pronounce an opinion on a matter which depended on a skilled comparison of Grammar and structure, but the subject was one which had been too much neglected: he was sure all the members took the greatest possible interest in it. The arguments of the learned gentleman seemed most convincing, and if much might still be said on the subject, all must feel under the greatest obligation to the learned gentleman for so well broaching it, and provoking a discussion which will no doubt eventually throw complete light on the matter.

One word he would like to say as a mere lay bystander, on the point last noticed by the learned gentleman, viz., the character to be used in writing the Vernacular language. He had understood the learned gentleman to say,—that the character used by the unhappy gentleman of Agra, who was so unfortunate as, by a badly written note, to induce his wife to commit a premature Sutte, was Hindi. Now, he must say that story seemed to tell against the learned gentleman's argument, for Hindi being one of the Nagri characters which he extolled, if all adopted that character, a similar inopportune accident might happen to any one of the present company. The fact seemed to be, that although the Nagri in print or carefully written, is a very clear and precise character, it appears to be too angular and square for use in common writing, and in all parts of India some rounded modifications of it had been adopted for ordinary

use. Those modifications were exceedingly difficult to write and read. As regards the most common character, the Hindi, he must say, that he had known many people who wrote that character, but very few who could read their own writing, and scarcely any who could read any one else's writing. Bengali might be better, but, coming as he did from a part of the country where the Persian character was used in official business, to one where the Bengali character was used, he could not but be struck with the very great inferiority of the latter for practical purposes, being as it was, so very slow to write and so little rapid or smooth to read. Those defects seemed to affect all the modifications of the Nagri commonly used, and he doubted whether they could be got over.

Then as respects the Roman character, the remarks of the learned gentleman suggested to him (Mr. C.) what had occurred to himself, viz., that in the discussion on this subject, sufficient place had hardly been given to the very important question, whether in fact this Roman character is really good in a phonetic point of view; whether it has phonetic qualities of that catholic stamp which would render it fit for universal use. Being as he had said not scientific, he could not venture an opinion on this point, but as a practical man he could not help mentioning that doubts had occurred to him, from what he had seen of the use of the Roman Alphabet, when applied to two languages foreign to it. One of these was the English. Now they well knew that no language in the world was written in a less phonetic way; in none was there such a discrepancy between the writing and pronunciation, so much variety and uncertainty in the use of the same letters, and so arbitrary an attribution of various sounds to those letters. He could not but fear that great part of this difficulty might be due to the application of a foreign Latin Alphabet to a Teutonic dialect to which it was unsuited. Again, we had seen a partial application of the Roman character to the ordinary vernacular Hindustani of this country. And he confessed that such attempts as he had seen, appeared formidable and horrible to the eye, and he never could make head or tail of them. The immense variety of spelling when Roman letters are applied to Indian words, also seemed to indicate difficulty. A gentleman had two or three years ago published a guide book to India, in which for the expression of Indian names and terms, he used the Roman alphabet in what he considered

a phonetic way. The result was, that it was impossible to recognise the most familiar of our old friends. To take an instance, we know 'Cawnpore,' well enough but when we come across 'Khanpur' we can make nothing of it. It did appear to him that the phonetic excellence of the Roman character had yet to be demonstrated.

There remained the Persian character now so extensively used throughout a great part of India. Of course he meant the Arabic character as modified and used in the modern Persian, and here generally called the Persian character. He had much practical experience of the use of this character, and thought it could not be for one moment denied, that for ordinary business, and all the purposes of cursive writing, this character possessed enormous advantages. It is true, he said, that there is a want of precision and certainty about it, when used to express foreign proper names and words not of customary use, being in fact, as ordinarily written, a sort of refined short hand; but even this could be for the most part remedied by the use of Arabic punctuations in regard to particular doubtful words, and by the introduction of our stops and capitals. It is also true that the free use of this character requires much practice; that in fact it is not fitted for rude beginners, and can only be used with advantage by highly educated people. But as used by them, it undoubtedly possesses a facility both for writing and reading unrivalled, and is not only first, but is without a second. The rapidity and facility with which business is conducted in this character, as compared with any of the Nagri forms or even with English, is astonishing. In truth he could hardly doubt that as it is a later product of the human mind, so it is a more refined and polished instrument of human art than the Nagri or Roman characters.

Without therefore venturing an opinion, which he was ill-qualified to prove, he would only venture with much diffidence to throw out a suggestion whether there might not be advantages in the simultaneous use of several alphabets now prevailing in the greater part of India. The arguments of the learned gentleman whose paper they were discussing, had certainly suggested to him grave doubts whether uniformity of alphabet is really so great an object, when there is diversity of language, for as the learned gentleman well said, the time required to master an alphabet might be measured by hours, while that required for a language must be measured by years. If then a

second Alphabet renders the use of a second language more easy, might not the hours required to master the second Alphabet be well spent? His suggestion then was this: whether the vernacular Alphabet of Nagri type or better the Nagri itself might not still be used for the lowest form of instruction and the expression of the most vernacular form of languages by villagers and children; also perhaps for matters of accounts and some village records, whether the higher education of all the more educated classes might not still be conducted in the Persian character, so much the best for cursive epistolary and ordinary business transactions; and whether, for the higher official business and record, for the higher literature, languages and science, the English language might not gradually be brought in, instead of attempting to force the Roman character before the English language.

FOR SEPTEMBER, 1864.

The Monthly General Meeting of the Asiatic Society of Bengal was held on the 7th instant.

Captain W. N. Lees, Vice-President, in the Chair.

The Proceedings of the last meeting were read and confirmed.

Presentations were received—

1. From Lieutenant Waterhouse, a set of Photographs of ruins at Pathari.

2. From Major General A. Cunningham, a rubbing of an Armenian Inscription from a grave-yard in Behar. The Inscription was sent to Mr. J. Avdall, by whom it has been translated. He says—
“It is devoid of any public or literary interest.”

3. From Lieutenant R. C. Beavan, a collection of Indian Lepidoptera and a grass Parrakeet.

4. From J. Cock, Esq., a collection of Coleoptera from Assam.

5. From W. L. Heeley, Esq., a Mantis.

6. From Major C. Herbert on the part of A. Grote, Esq., a Kangaroo.

7. From Mr. C. Swaris, a Bird of Paradise.

8. From Captain A. B. Melville, a set of Stereoscopic Photo-

graphs* representing the principal characters of a mystery play witnessed by him at the Hisnis Monastery between Leh and Ladak.

The following letter accompanied the presentation :—

“ *Dehra Dhoon, August 20th, 1864.*

MY DEAR SIR,—In the beginning of 1863, as we were marching up through Ladak towards the Pungong Lake, where our survey operations for that year were to be carried on, we were delayed several days by rain at the village below the celebrated Buddhist monastery of Hisnis, which is situated in a lateral ravine about two marches up the left bank of the river Indus above Leh. While encamped here, we got information from one of our guides about the religious mystery plays performed by the monks on certain religious festivals. They are mentioned in Moorcroft's *Travels*, Vol. I. page 345. By means of a present to the Abbot, we persuaded him to give us a private performance. Luckily, having photographic apparatus with me, I arranged to take negatives of ten of the principal characters, prints of which I now enclose. I have put the names I obtained on the back of each.

I was greatly struck with the resemblance of this play to the Burmese *poeys* (or Nautch,) that I saw in 1853, particularly as to the masks and demons introduced, and I have been informed by an officer who assisted at the reception of the Burmese Ambassadors in Calcutta, that the head dress shown in No. 6 is almost identical with some of the head dresses then worn by the Burmese. It struck me also that there was a very strong resemblance between this play and the old Roman Catholic feast of Unreason or All Fool's Day, so well described in one of Sir Walter Scott's novels, either the *Abbot* or the *Monastery*. The Band shown in No. 10, throughout the whole of the performance, kept up a low monotonous music, accompanied by a low chant of monks. The figures came in, generally in groups of 5 and 6, and after dancing a short time, retired into the monastery, and were replaced by others: occasionally a jester and a sort of harlequin, with him, came in with the other characters, and played practical jokes on each other.

* Endeavours will be made to reproduce these for publication in a future number of the Journal, in conjunction with a more detailed description of the play, communicated by Captain H. H. Godwin Austen.—Eds.

The plot, as far as we could make out, seemed to be a Ladaki Royal Court, with gods as the chief personages instead of kings, and, in one part of the performance, the characters represented in No. 4, and several others came in, attending on Thlogan Padma Jagnas who had a large umbrella held over him. These then performed a slow solemn dance.

The characters represented in No. 3 were always seated in line, with the bell and a small drum in their hands, and appeared to represent the courtiers. There is a wonderful resemblance in their dress to some of those worn in Roman Catholic processions.

The dresses were very handsome, being made of thick China silk covered with devices, in which the dragon continually figured. The masks were beautifully made of papier mâché. One peculiarity about the costumes, is the continual use of the human skull as an ornament, as shown in Nos. 4 and 5; and nearly all the masks have three eyes, one in the centre of the forehead.

The figures in No. 1 had a most remarkable hat with long streamers of different coloured silk flying behind. Their dress was, I think, the handsomest, and as they moved round in a sort of revolving dance had a strange and very novel effect.

The great peculiarity of No. 2 was that they had masks of brightly polished brass, which the name indicates, *azong* Copper and *bukha* masks. No. 9 appeared to represent some sort of fight. There were twelve characters, all with flags, with three eyes painted on them, fastened to the top of their head dress. They were all dressed alike, with the exception of 6 having red masks and 6 brown. The red masks (*Numking*) came running in from one side and the brown (*Tsaking*) from the other, and performed a sort of war-dance, striking each other's drums, &c., and then retiring as they had come in. No. 7, was perhaps the most remarkable of all the dresses: it was an attempt to represent the dance of death. Only two characters came in, dressed as skeletons; their masks were beautifully made, and had springs by which the jaws opened and shut, and thus enhanced the effect.

No. 8 apparently represented the divinity to whom the monastery at Pituk near Leh, is more particularly dedicated.

Besides the characters I have described, there were many more, but very similar, and I think the photographs I have sent will give a very fair idea of the costumes and dresses. What is the meaning of these

plays and whence their origin, is a point well worth inquiry. Captain Godwin Austen, who was one of our party was lucky, enough to purchase a manuscript giving the stage instructions for these plays; he is trying to have it translated, and I hope it may throw some light on the subject.

From the monks themselves it is impossible to find out any thing; either the origin and meaning of these plays has been lost, or is confined to the monasteries near Lassa, or else they are unwilling to divulge the mystery.

Captain Godwin Austen told me that as he was returning by the Gaurin monastery, he saw a similar mystery play going on: only they had the body of a man made of dough in the centre, on a sort of bier, and they were dancing round, firing arrows into the body and cutting at it with swords. This reminded me very much of the old days of magic in England, when we read that to do a person an injury the magician used to make a figure of that person in wax, imagining that the wounds and tortures he inflicted on the figure would be extended to the actual person.

I hope shortly to send another set of photographs, illustrating the monasteries and idol rooms of Ladak.

Hoping that this slight sketch may interest some of the members of the Society.

I remain, &c.,
(Sd.) A. B. MELVILLE, *Capt.*,
G. T. Survey.

To the Secretary, Asiatic Society, Calcutta.

Bábu Rajendralála Mitra read the following note on a hoard of Páthán Coins lately discovered in Cooch Behar.

"A short time ago, Colonel Haughton announced the discovery of a large hoard of ancient Coins in Cooch Behar, and suggested that it might be received as bullion by Government, as part of the annual tribute of the Cooch Behar estate, in order to enable numismatists in Calcutta to have a sight of it.

"The Coins have since been received at the Mint, and I have had several opportunities of examining them. They number 13,500, and comprise specimens of the coinages of eight of the Páthán sovereigns of Delhi, and of four of the independent Páthán kings of Bengal.

"Though presenting no great features of novelty, these coins are

of interest as affording a number of varieties which were hitherto unknown. This is what was to be expected in a large collection, inasmuch as the art of die-cutting was in so primitive a state in the days of the early Pátháns, that no two dies could be turned out exactly alike, and their produce was necessarily very different. Muhammadan sovereigns, besides, took great interest in the designs of their coins, and frequently changed them, and in long and prosperous reigns this too led to a great multiplication of types and varieties.

"The great bulk of the find consists of the coins of Shamsuddin Iliás Sháh Bangarab, Sikandar Sháh bin Iliás, and Ghyásuddin Azim Sháh bin Sikandar, three of the earliest independent kings of Bengal. Of the first of these, there are three distinct types, the first having the legend enclosed in a large circle on the reverse, and the second in a small circle; the third having a double line square framing on the obverse. Of varieties of these types there are no less than 20, but they are due entirely to the die-cutter, and therefore call for no notice. Of the coinage of Sikandar, son of Iliás, there are no less than six distinct types, four of which have not hitherto been noticed by any antiquarian. One of them offers the rudest specimen of coin in the whole collection, and another as good as any that has ever been issued by a Bengal Páthán. Ghyásuddin, son of Sikandar has five types and no less than fifteen different varieties.

"Of the other Bengal Pátháns whose coins occur in this trove I have to notice Firuz Sháh the Abyssinian, who appears with the *prenomén* Shamsuddin instead of the commonly known Tájuddin, and Bahádur Sháh, who raised the standard of revolt in A. D. 1317, during the reign of the effeminate Mubárik, and for some years successfully maintained his independence. The time of Bahádur was occupied in organising and strengthening his newly-acquired principality, and he had little leisure to think of the design of his coin. He affords, therefore, a single type and a very indifferent specimen of Bengal rupee. Mr. Laidlay does not include this prince in his paper on the coins of the Páthán kings of Bengal, but his independence was complete, and I see no valid reason for excluding him. The number of his coins in the trove exceeds 200.

"The Delhi Pátháns represented in this trove are Ghyásuddin Balban, Muázuddin Kaikobad, Jelláluddin Firuz, Alláuddin Muhammad Sikandar Sáni, Ghyásuddin Tughlak, Fakheruddin Mohammad

and Mohammad Adil Sháh. The total number of their coins does not exceed 150, or about one-fiftieth of the whole. There is only one type of each reign and of the earlier kings not more than two or three specimens each. The coins of Tughlak Sháh and Mohammad Adil are of new types, the latest coin in the hoard is that of Adil Sháh who ascended the throne of Delhi in 1552, and the hoard therefore must have been buried within a few years after that date, or about three hundred years ago. The number of Adil Sháh's coins does not, however, exceed a couple: the great bulk of the hoard is made up of coins of the 13th and 14th centuries, it must therefore have been collected two centuries before it was buried.

"The following is the list of the different kinds of coins found in the trove:—

LIST.

DELHI PÁTHÁNS.

1. Ghyásuddín Balban, A. D., 1266 to 1286, 10th King.
2. Müázuddín Kaikobád, 1286, 11th ditto.
3. Jelláluddín Firúz, 1288 to 1295, 12th ditto.
4. Alláuddín Muhammad Sikandar Sáni, 1295 to 1316, 14th ditto.
5. Ghyásuddín Tughlak Sháh (new type), 1321 to 1325, 18th ditto.
6. Fakheruddín Muhammad bin Tughlak, 1325 to 1351, 19th ditto.
7. Muhammad Adil Sháh (new type), 1552 to 1553, 39th ditto.

BENGAL PÁTHÁNS.

Ghyásuddín Báhádur Shah, 1317 to 1322.

Fakheruddín Mubárik.

Shamsuddín Iliás Sháh Bangarah, small circle reverse, 1343 to 1358.

Ditto ditto, large ditto.

Ditto ditto, Square field obverse.

Sikandar Sháh bin Iliás, Rose field reverse, 1358 to 1367.

Ditto do., Hexagonal field reverse,

Ditto do., small circle reverse.

Ditto do., large do. do.

Ditto do., short legend, rude letters.

Ditto do., field on the obverse formed of a rose with 4 petals the margin having 4 circlets, the field on the reverse has an angular figure with 6 salient and 6 receding angles.

Ghyásuddin Ázam Sháh bin Sikandar, lozenge obverse, 1367 to 1373.

Ditto ditto, square ditto.

Ditto ditto, field on the obverse square having scalloped projections from the middle of each side, the reverse a rose of 4 petals.

Ditto ditto, square obverse, lotus reverse.

Ditto ditto, circular obverse and reverse.

Shamsuddin Firúz Sháh, A. D. 1491.

Bábu Rájendralála Mitra also exhibited a set of the Zodiacal rupees of Jehangir (except Scorpio and Aquarius) and a bacchanalian medal of that Emperor belonging to the collection of Colonel Guthrie. The rupees bear the Agra mint mark, and the same legend throughout, but their dates differ, Leo, Taurus, Gemini and Virgo being of 1028 H, Aries of 1030 H, Libra, Sagittarius, Capricornus and Pisces of 1031, and Cancer of 1033 H. Their excellent state of preservation and the fact of the figures of Aries, Taurus, Gemini, Libra, and Sagittarius, being unlike those to be met with on genuine Zodiacal rupees, but very similar to those of the Zodiacal Mohurs, suggest the idea of the rupees being forgeries, probably of the batch which is said to have been coined by General Claude Martin of Lucknow.

The medal was described as new, having an effigy of the Emperor seated in the centre and holding a decanter of wine in one hand and a cup lifted to his mouth in the other, with a legend round the margin. The reverse has on the field the figure of a lion *passant* with the sun rising behind it, and a legend on the margin. The figures represent the entrance of Sol into Scorpio and are emblematic of the birth of the Sovereign on a Sunday in the month of August. In its style of workmanship and state of preservation it is equal to the best specimen of Jehangir's coinage. Marsden in his *Numismata Orientalia* has a figure of a bacchanalian medal of the Emperor, but the legend in it is given on one side. He also alludes to a medal in the Collection of Mrs. Welland, which has the legend round the margin, but the wording of which appears to be different.

The word *ibn* in the legend, the Bábu said, was suspicious, inasmuch as it occurs in no other coin of Jehangir, but he accounted for it on the ground of exigency of the metre in which the legend was written. The bacchanalian character of the figure, he added, was in no way unbecoming a monarch who, in his autobiography, reckons the daily

allowance of his drink at 25 glasses of double distilled arrack, however much the parade of such weakness was unbecoming in a Moslem.

The legend in the obverse is—

شبه شاه نورالدین جهانگیر ابن اکبر شاه
بروی سکه زرداد چندین ذیب و زیور

Ditto on the reverse—

شاه نورالدین جهان گیر ابن اکبر بادشاه
زد میز این سکه دراجمیر شاه دین پناه

The Honourable George Campbell observed that he would take advantage of the introduction of the subject of coinage to enquire, with reference to a statement in "Purchas," now under republication in the *Englishman* newspaper, that there was a coin in currency in the Mogul times called Scraffin, of the value of 10 Rupees, whether they might not be the origin of the English "Sovereign." He threw out the suggestion, merely as likely to lead to an interesting enquiry, and perhaps to show that recent financial measures have been anticipated so long ago as the time of Jehangir.

The following gentlemen duly proposed at the last meeting were balloted for, and elected ordinary members: J. Beames, Esq., c. s.; The Hon'ble E. Jackson; Baboo Tarruck Chunder Sircar; Captain E. B. Sladen, and R. Jardine, Esq., c. s.

The following gentlemen were named for ballot as ordinary members at the next Meeting:

Baboo Bhoodeb Mookerjee,—proposed by Baboo Gourdass Bysack, seconded by Mr. Heeley.

H. H. Locke, Esq., Principal of the Calcutta School of Art,—proposed by Mr. Heeley, seconded by Mr. H. F. Blanford.

The Hon'ble J. B. Phear,—proposed by Capt. Hyde, seconded by Mr. H. F. Blanford.

Col. W. D. Short,—proposed by Mr. Heeley, seconded by Mr. Geoghegan.

C. W. Hatton, Esq., proposed by Mr. Heeley,—seconded by Mr. H. F. Blanford.

The Council reported that the following gentlemen had been elected to the Committees.

Philol. Committee.—H. C. Sutherland, Esq. ; Nat. Hist. Committee Baboo Debendro Mullick ; Statistical Committee—C. B. Garrett, Esq.

They also reported that they had added a Durwan and a Ferash to the establishment of the Museum.

Communications were received—

1. From the Ven'ble J. H. Pratt, a letter on his paper entitled “on the degree of uncertainty which local attraction, if not allowed for, occasions in the map of a country, and in the mean figure of the earth as determined by Geodesy ; a method of obtaining the mean figure free from ambiguity by a comparison of the Anglo-Gallic, Russian, and Indian Arcs ; and speculations on the constitution of the earth's crust.”

2. From Baboo Gopeenath Sen, an abstract of the hourly Meteorological Observations taken at the Surveyor General's Office in June last.

3. From H. B. Medlicott, Esq., a note relating to the Sivalik Fauna.

4. From Lieutenant Colonel E. T. Dalton, notes during a tour in 1863-64 in the Tributary Mehals, under the Commissioner of Chota-Nagpore, Bonai, Gangpore, Odeypore and Sirgooja.

5. From the Rev. F. Mason through Colonel Playre, answers to the “queries for travellers” embracing Religion, Mythology and Astronomy among the Karens, with a vocabulary of eight dialects.

Mr. H. B. Medlicott read a notice referring to his description of the Sub-Himalayan rocks in the Memoirs of the Geological Survey of India, Vol. III. p. II. The deep unconformability between the upper and middle groups of those tertiary deposits had led him to question a statement that fossils had been found in the older groups, of the same kind as those in the true Sivalik beds. Sir Proby Cautley sets at rest the fact of fossils being found in the inner Zone ; and reaffirms his opinion that they are the same as some of those from the Sivaliks. The inference, therefore, becomes very strong, that in the Fauna Sivalensis two separable stages have been confounded : the deep unconformability along the inner boundary suggests a far greater separation than could be surmised from the mere fact of succession as apparent in the outer section. As Colonel Cautley's collections from those special localities have been lost, the question must wait for fresh data.

Mr. Blanford made some observations on this paper.

A memorandum by Dr. Williams on the question of British Trade with Western China *viâ* Burmah was then read by the Secretary :—

Dr. Williams first touches upon the political state of the countries between the Bay of Bengal and Central China, and shows that the feelings of the Burmese Government with regard to the promotion of British enterprise had undergone a favourable change. After dealing with the condition of the Karen and Shan States, he explains the political position of the province of Yunan, where the rebel Government of the Pansee, or Chinese Mussulmans is now predominant; and he states that it appears to be the wish of that government to facilitate communication with the West. The Singpho or Kahkhan tribes stretching from North Assam round the North of Burmah to Western China have of late assumed practical independence with regard to their Burmese Suzerain, but also appear to be quite prepared to give a passage to traffic, on certain conditions of black mail.

The next subject is the physical character of the district, viewed with reference to the selection of a line of route for trade. The Salween is not navigable, and the formation of a road from Showgyeen to that river and along its valley to Mantungye, or across the hills to the Cambodia river, is rendered impassable by the steepness of the mountain passes which would have to be traversed. The route from Mandalay to Theinnec also contains one difficult and almost impossible ascent, although, this once overcome, there is an uninterrupted plain to the centre of Yunan. The ascent of the Irrawaddy above the capital is practicable to Bamo, for steam navigation, but the defile above Bamo would form an insuperable obstacle to further progress. East of Bamo, however, the range of hills, though not fully explored, appears to present fewer difficulties than in any other direction; and when once crossed, there is no obstacle to the construction of any kind of road or railroad. This, therefore, is the route which Dr. Williams recommends.

He then proceeds to enumerate the commercial advantages to be expected from this communication. Coal crops out in several places near the Upper Irrawaddy, and there are large deposits of magnetic oxide of iron, producing steel of first rate quality. The lead ore in one of the mountains is exceedingly rich in silver. English manufactures of the most inferior kind find a good market in Upper Burmah and among the Shans; and the trade might, with better roads, be indefinitely

extended. Yunan itself with its ten millions of population is a most important district; it produces cotton, silk, and the finest tea. Sechuen, with a population of thirty millions, is at least of equal importance. Dr. Williams gives much detailed information respecting the products of these provinces, and the articles of British manufactures which are likely to find a market in Yunan.

He concludes by pointing out that the Bamo route, the ancient highway of trade between China and Burmah, is the route to which there are fewest objections, both for railroad and telegraphic communication; that even the construction of an ordinary road would immensely aid traffic, and that the revival of this traffic would be of immense advantage to China, Burmah and Britain, and to the cause of progress generally.

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On the Origin of the Hindvī Language and its Relation to the Urdu Dialect.—By Bābu RA'JENDRALA'IA MITRA. Corresponding Member of the German and the American Oriental Societies.

[Read 12 August, 1864.—Revised 10th October, 1864.]

The history of our vernacular dialects, like that of our social and political condition during the Hindu period, remains yet to be written. It is not remarkable, therefore, that considerable difference of opinion should exist as to their origin. Our Sanskritists take every thing to be Sanskritic. Those of our philologists who have devoted much of their time to the dialects of the south of India, cannot, from habit and long association, look at an Indian dialect from other than a Turanian stand-point. And most of our Persian and Arabic scholars, in the same way, observe every thing through a Semitic medium. Hence it is that the Hindvī has been sometimes called a Sanskritic, sometimes a Turanian, and sometimes a Semitic dialect. The balance of opinion, however, now preponderates in favour of the theory which assigns to it a Sanskrita origin. It has been shewn that the affinity of its roots is unmistakeably Aryan, that its phonology and laws of permutation are peculiarly Sanskritic, and that the number of Sanskrita vocables traceable in it, amount, at the lowest computation, to 90 per cent. The discussion on the subject has, however, not yet been brought to a close. Even at the last meeting of this Society, my learned and respected friend, Capt. Lees, in his valuable essay on the Romanising of Indian Alphabets, stated that the Hindustānī had not an alphabet of its own, and was therefore a fit

dialect to be written down in the Roman characters. It may not be uninteresting therefore to enquire what is the origin of the Hindví, the parent of the Hindustáni, and how far is it removed from the original Sanskrita to be disentitled to the use of the Nágari alphabet as its natural symbolical representative; although in making the enquiry, I shall necessarily be obliged to run over ground which has already been very carefully traversed by some of the most distinguished philologers of the day, and to repeat much that is generally well known and admitted.

The Hindví is by far the most important of all the vernacular dialects of India. It is the language of the most civilised portion of the Hindu race, from the eastern boundary of Behar to the foot of the Solimáni Range, and from the Vindhya to the Terai. The Gúr-khas have carried it to Kernaoon and Nepal, and as a *lingua franca* it is intelligible everywhere from the Kohistan of Peshawar to Assam, and from Kashmir to Cape Comorin. Its history is traceable for a thousand years, and its literary treasures are richer and more extensive than of any other modern Indian dialect, the Telegoo excepted. No doubt it has not always been the same, nor is it exactly alike every where over the vast tract of country in which it prevails. For a living language growing with the progress of time, and universally influenced in different places by various physical, political and ethnic causes, such a thing would be impossible. But there is sufficient similitude between the language of the *Prithviráya-Ráso*, the most ancient Hindví work extant, and the Hindví of our day, and between the several dialects of Hindví, Hindustáni, Braja Bháshá, and Ráñgri into which the modern Hindví is divided, to shew that they are all essentially one—dialectic varieties of the same language—branches of the same stem, and not issues from different trunks.

The *Prithviráya-Ráso* was written nearly nine hundred years ago, and yet the difference between its language and that of the *Premaságar* one of the most modern books in the Hindví, is not even so great as—certainly not greater than—that between the languages of Chaucer and of the *Times* newspaper, and whatever that is, it is due more to the use of obsolete and uncouth words than to any marked formal peculiarities. Chand, the author of the *Prithviráya-Ráso*, has been very aptly described by the learned de Tassy as the Homer of the Rájputs.*

* Chand, qu'on a nommé l'Homère des Rájputs, est certainement le plus populaire des poètes Hindví. De Tassy's *Rudiments de la Langue hindví*, p. 7.

He was a minstrel in the court of Prithvirāj, the valiant knight of Kanouj, and appealed to the people in language suited to their capacity. It will be no presumption then to take the language of his epic as the vernacular of the then flourishing kingdom of Kanouj and of Northern India generally. How long before the time of Chand, that language was the vernacular of India, it is impossible now to determine, for from the time of Vikramāditya the great to that of Prithvirāj, we have no reliable information of any kind regarding the vernaculars. The literary work of every-day life was in those days transacted in the Sanskrita, and the language of familiar intercourse was never thought worthy of record.

Passing over *per saltum* the gap between the time of Prithvirāj and Vikrama, we find in the first century B. C., a number of dialects bearing the names of some of the principal provinces of India, such as Behar, Mahratta, &c. These were undoubtedly the vernaculars of those provinces at the time, for they could not otherwise have taken their local designations, nor assumed the position they held in the dramatic literature of the time of Vikramāditya. Their mutual differences were but slight, not much more prominent than what may be noticed in the English as spoken in London, Wales and Yorkshire; and they were all known by the common name of the Prākṛita. Professor Wilson, it is true, was of opinion that the Prākṛita could not have been a spoken dialect, but his arguments have been so fully met and so frequently refuted by Max Müller, Sykes, Weber, Lassen and a host of other distinguished scholars, that I need not dwell upon them here.

Two centuries before Vikramāditya, As'oka appealed to his people in favour of Buddhism in a language which has been called the Pāli. It was a form of Prākṛita standing midway between the language of Vararuchi's grammar and the Sanskrita of Pāṇini. Whether it was ever a vernacular of India has been doubted, and some have gone the length of calling it a "quasi religious" or a "sacred dialect." But "a careful examination of the As'oka edicts," to quote what I have elsewhere said, "clearly shews that it is a stage in the progress or growth of the Sanskrita in its onward course from the Vedic period to the vernaculars of our day, produced by a natural process of phonetic decay and dialectic regeneration, which can never be possible except in the case of a spoken dialect. Professor Max Müller, advert-

ing to these changes, justly says, they 'take place gradually, but surely, and what is more important, they are completely beyond the reach or control of the free will of man.' No more could As'oka and his monks devise them for religious purposes, than change the direction of the monsoons or retard the progress of the tides. It is said that Marcellus, the grammarian, once addressed the emperor Tiberius, when he had made a mistake, saying, 'Cæsar, thou canst give the Roman citizenship to man, but not to words;' and *mutatis mutandis*, the remark applies with just as much force to As'oka as to Tiberius. There can be no doubt that As'oka was one of the mightiest sovereigns of India. His sway extended from Dhauli on the sea board of Orissa to Kapur-di-Giri in Afghanistan, and from Bakra in the north-east to Junagar in Guzerat. His clergy and missionaries numbered by millions; they had penetrated the farthest limits of Hindustan proper, and had most probably gone as far as Bamian on the borders of the Persian empire. Religious enthusiasm was at its height in his days, and he was the greatest enthusiast in the cause of the religion of his adoption. He devised his edicts to promote that religion; had them written in the same words for all parts of his kingdom; and used exactly the same form everywhere: but with all his imperial power and influence, he could not touch a single syllable of the grammar which prevailed in the different parts of his dominions. In the north-west, the three sibilants, the *r* above and below compound consonants, the neglect of the long and short vowels, and other dialectic peculiarities, rode rough-shod over the original as devised by him and his ministers and apostles in his palace, and recorded in Allahabad and Delhi; while at Dhauli nothing has been able to prevent the letter *l* entirely superseding the letter *r* of the edicts. Had the language under notice been a "quasi religious," or a "sacred dialect," it would have been found identically the same in all parts of India, for the characters used in the Delhi, Allahabad, Dhauli and Junagar records are the same, and if uniformity had been sought, it could have been most easily secured. But popularity was evidently what was most desired, and therefore concessions were freely made in favour of the vernaculars of the different provinces at the expense of uniformity. Unless this be admitted, it would be impossible to explain why the word *Rājā* of Delhi, written in the same characters, should in Cuttack change into *Lājā*. Had the language been a sacred

one, intended for the clergy only, no such concession would ever have been required. The Sanskrita of the Brahmanic priesthood is alike everywhere, and so is the Latin of the Roman Catholic clergy. It is the people whom As'oka wished to address, and accordingly adapted his language to the capacity and the idiom of his hearers." And if these arguments be admitted, and similar arguments have already led Dr. Max Müller, Mr. Muir and others to admit, that the Pāli was the vernacular of India from Dhāuli in Cuttack to Kapur-di-giri in the Yusafzai country in the time of As'oka, and for some time before and after it.

Ascending upwards to the time of the first great convocation of the Buddhist clergy, soon after the death of S'akya Sīṃha, we come across a kind of corrupt Sanskrita called the *Gāthā*, which was used for ballads and improvisations by the scalds and bards of that period. For reasons which I have already submitted to this Society in my paper on the *Gāthā* dialect, I take that language to be the first stage in the transition of the Sanskrita into the Prākṛita, and the vernacular of Brahmanic India in the fifth and sixth centuries before the Christian era.* For the purposes of the present enquiry we need not proceed further. We have the *Gāthā* proceeding directly from the Sanskrita and forming the vernacular of India in the sixth century, B. C.; the Pāli following it in the third, and the Prākṛita in its different forms of Māgadhī, Saurasenī, Mahrāṭṭī, Pais'āchi, &c. in the first century of that era. How long the last flourished we know not, nor have we any information as to the transitions it underwent, or the dialect or dialects which succeeded it. But passing over a period of about a thousand years, we come to the Hindvī in the tenth century, and the question hence arises, Is the Hindvī a produce of the Prākṛita, or a different and distinct language which has succeeded it? Muir, De Tassy, and the German philologists generally, maintain the former position; while Crawford, Latham, Dr. Anderson of Bombay and others assume the latter. They all agree that no less than 90 per cent. of the vocables of the Hindvī are Sanskrita; and if the affinity of its roots were alone to decide the question of its affiliation, there could be no doubt as to its claims to a Prākṛitic, and necessarily a Sanskritic origin. But, since a language is to be judged more by its formal than by

* Dr. J. Muir has adopted this opinion in his *Sanskrit Extracts*, Vol. II. p. 124 *et seq.*

its radical elements, and the formal elements of the Hindví are apparently very unlike those of the Sanskrita, but closely similar to those of the Scythic group of languages, it is argued that it must be a Turanian or Scythic, and not an Aryan dialect. To meet this, we must enter into some detail regarding the changes which the grammatical apparatus of the Sanskrita has undergone in some of the Sanskritic dialects, such as the Gáthá, the Páli and the Prákṛita and then trace its relation to the Hindví.

Beginning with the inflection of nouns, we find that the first step in the transition of the Sanskrita into the Gáthá, was the omission of the mark of the nominative singular—*s*, which after *a* assumed the form of the aspirate *visarga*. Where the Sanskrit said *Rámah*, the Gáthá was contented with *Ráma*. This was exactly what was to be expected, for the most prominent feature of the changes which led to the transition of the Vedic Sanskrita into the language of the *Rámáyana* and the *Mahábhárata* was the softening down of harsh and difficult combinations of several consonants, and of elision of aspirates. The aspirate of the nominative singular was, besides, not common to all nouns, but only to themes ending in *a*. Words ending in consonants, in the vowel *ri* and in long *i* or *ú*, received no aspirate, and their analogy prompted the elision of it also after *a*. This elision in the Gáthá was, however, occasional and not universal. It retained the aspirate as often as it dropped it, and sometimes supplied its place by the letter *u*, and so all the three forms of *Rámah*, *Ráma* and *Rámu** are to be met with in the ballads of the Gáthá.

The *s* of the Sanskrit, which becomes a visarga after *a*, changes into *o* if an *a* follow it. But in the Zend, the latter condition is not necessary, hence *o* is the usual termination in the nominative singular, and it is its contraction that we meet with in the Gáthá in the form of *u*. The Páli of As'oka's edicts omits the *s*, but never takes the *o* or *u*; but in the Páli of Kátyáyana's grammar and as we find it in the Cingalese chronicles, the *o* is preferred to simple elision, so is it in the Prákṛita. Of the modern vernaculars the Braja Bháshá or the Hindví of Mathurá alone occasionally takes the *u*, but the others all drop all case-mark for the nominative. Thus the Sanskrit *Bálakah* becomes in Gáthá *Bálaka* or *Bálaku**, in Páli *Bálako*, in Prákṛita *Bálaka*, and in

* I have not noticed these words declined in the different forms, but the forms occur in connexion with different words.

Hindvī *Bálak* or *Bálaku*. The euphonic laws which regulate these changes are not yet known, but their operation is universal, and we accordingly find that the *s* of the Latin nominative singular is first dropped in the language of the Troubadours, in Provençal and French, but transformed into *o* in the Italian and Spanish. Thus the Latin *oculus*,* eye becomes in Provençal *huel*, in French *œil*, in Italian *occhio*, and in Spanish *ojo*; the changes being almost parallel to what we have seen above.

The flexional termination for the *accusative*, like that of the nominative, has been either dropped or assimilated with the dative in almost all the modern vernaculars. This commenced as early as the time of the *Apabhramsa* in which the Sanskrit accusative mark *m* used to be frequently if not uniformly omitted. In the Hindvī, this mark is *ko*, which in some of its patois, in poetry, and in some of the earlier writings, occurs in the form of *ku*, *koñ*, *kauñ*, *kaha*, *kañha*, *kahañ* and *hi*. Apparently this termination is perfectly distinct from the Sanskrit inflection, for both the accusative and the dative, and this has led to much discussion as to the ethnology of the Hindvī speaking races of India. Dr. Kay, (ante xxi. p. 109) thought the *ko* of the Hindvī and the *ke* of the Bengali, came from the Tartar suffix *ka*, and Dr. Caldwell bases on the existence of this particle his strongest argument in favour of the Dravidian origin of the Hindvī. He says, "of all the analogies between the North Indian dialects and the Southern, this is the *clearest and most important*, and it cannot but be regarded as betokening either an original connexion between the northern and the southern races, prior to the Brahman irruption, or the origination of both races from one and the same primitive Scythian stock." Dr. Trumpp, commenting upon this, observes: "At the first *coup d'œil* the identity of *खे, के, को*, etc., with the Dravidian dative case-affix *ku*, etc., seems to be quite convincing; yet, on nearer investigation, we shall find this comparison to turn out illusive. In the first instance, the fact speaks already very strongly against it, that the Maráthi, which is the closest neighbour to the Dravidian tongues of the south, has repudiated the use of *के* or *को* altogether, and used an affix, the origin of which we have attempted to fix, and as we hope, past controversy. We shall further see that the Gujaráti

* The Sanskrit *Akshi* (eye) the counterpart of *oculus*, runs a similar course, but as a neuter noun takes no case-mark in the nominative.

and Panjābī have also made up for the dative case by postpositions, borrowed from the Sanskrit, without the slightest reference to the Dravidian languages, and we may therefore reasonably expect the same fact for the remaining Arian dialects. It would certainly be wonderful if those Arian dialects which border immediately on the Dravidian idioms, should have warded off any Dravidian influence, and that those more to the north should have been tinged "deeply" with Scythian characteristics. Fortunately we are able to shew that such an assumption is not only gratuitous, but irreconcilable with the origin of the above-mentioned dative affixes. We derive the Sindhi *खे* and the Bengali *के* from the Sanskrit locative *कस्मै*, 'for the sake of,' 'on account of,' 'as regards,' being thus altogether identical in signification with the Mārathi *खा*, Bengali *re*, etc. This will at once account for the aspiration of *ख* in the Sindhi *खे*, for this is not done by mere chance, but according to a fixed rule. [See my System of Sindhi Sounds, 1, and note.] In Bengali there is no such influence of *r* on the aspiration of a preceding or following consonant, and therefore we have simply *के*. The Sanskrit form *कस्मै* becomes in Prākṛit first *कस्मै*, then (by the regular elision of *त्*) *कस्मै*, and contracted to *के*, and in Sindhi by the influence of (elided *r*) *खे*.

"The Hindvi and Hindustani form of this affix *को* (dialectically pronounced *kú* in the Deccan), which has apparently invited its comparison with the Tamil *kú*, etc., we derive in the same way from the Sanskrit accusative neuter *कस्मै*, which is used adverbially with the same signification as the locative *कस्मै*. In Prakrit already, and still more so in the inferior dialects, the neuter is confounded with the masculine, (and in the modern dialects which have no neuter, the neuter has been altogether identified with the masculine); we have therefore first in Prākṛit, *कस्मै*, then again, (by regular elision of *त्*) *कस्मै*, and contracted *को*. We can thus satisfactorily account for all these three forms, *खे*, and *को*, and *का*; how Dr. Caldwell will now identify them with the Dravidian *ku*, etc., I cannot see. That this derivation of *खे*, *के*, and *को* rests not on a mere fancy of mine, is farther proved by the Sindhi particle *रे* *without*, which is derived in the way described, from the Sanskrit locative form *कस्मै*, 'with the exception of,' 'excepted,' 'without'; Prākṛit first *कस्मै*, then *कस्मै*, and contracted *रे*."

* Journal Rl. As. Soc. XIX. p. 392. The *re* turns up in the Bengali dative in the same way.

This explanation, ingenious as it is, is not satisfactory. *Kṛita* is a participle from the root *kṛi* "to do," and the dative or accusative signification attributed to it is altogether a forced one. The indeclinable particle *kṛite* is often used in Sanskrita in lieu of, or to imply, some forms of the dative; but its contraction does not yield *ko*. We must look elsewhere, therefore, for the origin of this puzzling particle, nor are we at all at a loss on the subject. Professor Max Müller derives the Bengálí dative *ke* from the Sanskrita suffix *ka*, which is largely used in modern Sanskrita as an expletive, and I think we may trace in it the germ of the Hindvī *ko*. As a simple means of reducing nouns of different terminations to one standard, the syllable *ka* is a valuable adjunct, and scalds and improvisadores use it frequently to obviate the necessity of a multiplicity of declensions. Now, if we bear in mind that in the Gáthá, the ordinary method of indicating the elision of a case-mark is by the addition of *u* as in the words *jayu* for *jayam*, *kṛitu* for *kṛitam*, *kálu* for *kálam*, &c., (vide my edition of the *Lalita Vistara*.) we find the missing components of *ku* which was the architype of *ko*, and which is still largely used in colloquial Hindvī for both the dative and the accusative. We believe the *ka* at first took the ordinary accusative affix *m* after it. But gradually, it wore down to a nasal *ñ* and the inflexion became *kañ*. This transition is by no means uncommon in Aryan languages. In Greek the Sanskrit accusative affix *m* passed into *n* at a very early period, and in Bengálí it is invariably sounded as *ñ*. Now if we apply the expletive *u* to this *kañ* it becomes *kuñ*, and in this form we meet with it in the Uriah, which has preserved its similitude to the Sanskrit with more care than any other Indian dialect. It also occurs in the Decan Hindvī, and in the Braja Bháshá. The prolongation of the *u* yields *koñ*, and this variously pronounced forms in Northern India *koñ*, *kauñ*, *ko*, and the rest.

The dative of the Śanskrit in the first person singular is *e* which added to *ka* makes, by the elision of *a*, the Bengálí dative *ke*. It is true that according to the rules of Pánini, the *e* of the dative after themes ending in *a* should change into *aya*, but as corruption is the result of a fanciful analogy on the part of the illiterate masses, it is not remarkable that the universal affix *e* should replace the especial *aya*. In the Gáthá the reverse of this often occurs and the especial *ena*, the instrumental ending of themes in *a*, is frequently used after themes ending in consonants instead of the more legitimate and general affix

á ; the examples being *mahatena* for *mahatá*, *yasena* for *yasasá*, *rájena* for *rájñá*.

One form of the *instrumental* in the Sanskrit is *ná*. It is used after themes in *i*, *u* and *ri*. and the Hindví adopts it with but a slight change in the vowel, the endings being *na*, *ní*, *ne* and *neñ*. The similitude here is so close that we need not dwell on it at any length.

The Sanskrit *ablative* termination in the singular number of words ending in other than *a* is *as*. This changes into *hi* or *hinto* in the earlier Prákritis, and to *he* in the later, in which the ablative is confounded with the genitive. In the Bengálí the *hinto* passed into *haiñte* a little before the time of Chaitanya Deva, and subsequently into *haite*, the form in which we now have it. The *he* of the Prákritis, according to Dr. Trumpp, merged into *se* or *señ* in the Hindví on the ground of *h* and *s* being interchangeable, but we think the original Sanskrita *smát* the especial affix of the pronouns, offers a more probable source of *señ* and *se* than the secondary *he*. In either case the origin of the termination is purely Sanskritic. In the Braja Bháshá the *se* is generally replaced by *teiñ*, an obvious corruption of the Sanskrita *tas*.

- The *genitive* affix in the Bengali and the Uriah is formed by hardening the Sanskrita *syá* into *ra*. But in all the other Aryan Indian dialects, a novel mode is adopted which is traceable only in the old Vedic language. According to Dr. Trumpp, "The noun, which ought to be placed in the genitive case, is changed into an adjective, by an adjectival affix, and thence follows naturally, that this so-called genitive, which is really and truly only an adjective, must agree in gender, case, and number with its governing noun, as every other adjective does. The adjectival affix, used thus, to make up for a genitive, varies in the different dialects * * * The Hindví and Hindustání have preserved the original Sanskrit adjectival affix क without changing into a palatal, viz., का; in Hindví we meet with the genitive affix कौ कौ. A further proof that these genitive affixes जो, चा, का, कौ, etc., are really the adjectival affix क of the Sanskrit, and the कौ of the Prákrit, we have in the fact, that they all end in *o*, a long vowel, *ó* = *á*; as all those adjectives do, which are formed with this affix (see my system of formation of themes under the termination कौ.)"

The *locative* in the Sanskrita is *i* or *e*, which has been carefully preserved in the Bengálí, though the ablative *te* proceeding from the Sanskrita *tas* is occasionally used in a locative sense. The *e* changes

into *smīn* after words of the class "*Pūrva*, &c." and this *smīn* seems to have been adopted as a general termination for the locative in the Pāli. In the Prākṛita it merged into *mmi*, and in the Hindvī the *mmi* appears in the different forms of *meñ*, *mai*, *moñ*, *mañ*, *mahi*, &c. Dr. Trumpp has overlooked this obvious derivation in his "Declensional Features of the North Indian Vernacular," in which he says, "In Hindvī and Hindustānī the locative, as a case, has been quite lost, and only some vestiges of it remain, as: *हेने*, or emphatic *हेनेही*, 'in being,' and thus a locative can be formed with all participles, present or past, which are generally looked upon by our European grammarians as indeclinable participles, but which are in reality only locatives as it is most clearly borne out by comparing the cognate dialects."* In some forms of the Hindvī, the *me* of the locative is replaced by *pai* and rarely by *paiñ*, the origin of which we can trace only to the Sanskrita preposition *upara* "upon" which first changed to *par* in such sentences as *mupar* "on me," and subsequently to *pai*, the nasal affix being a euphonic adjunct which in the Braja Bhāshā is largely introduced often without any obvious reason. The same was the case in the Bengālī four hundred years ago, and the *Chaitanya Charitāmṛta* affords innumerable instances of its use in words like *jāyīñā*, *khañyīñyā* for the modern *jāyiyā*, *khāyiyā*, &c.

The *vocative* in the Hindvī is identically the same as in most forms of the Sanskrita, being formed by the addition of the interjections *he*, *re*, *ahe* (for *ayi*.) &c. A few of the interjections are peculiar to the Hindvī, but they offer nothing of importance for comment.

The *personal pronouns* are so obviously Sanskritic that we need not swell this paper by tracing the gradual changes which they have undergone from the time of the Prākṛitas to our own day. The only word which appears to some to be of doubtful origin is the third person *vah* plural *vai*, but the difficulty vanishes if the Sanskrit *asau* be taken as its archetype.

The verb generally undergoes a greater variety of changes than any other class of words. It is said that in some American languages, verbal roots may appear in no less than six thousand different forms. In Sanskrita, the changes are not so numerous, still they exceed three hundred. In Greek and Latin they are less, and in modern European languages generally very few; in English the least—not

more than six or seven in all. Still compared to nouns of their respective languages, the verbs assume a much greater variety of forms, and therefore their conjugational affixes offer the most ready materials for tracing their origin. This test applied to the Hindvī fails entirely to detect in it the smallest amount of a Seythie or Dravidian element. No doubt the niceties of the Sanskrita conjugation, the ten classes, the three voices, the ten moods and tenses, have all disappeared in the Hindvī, as they have more or less in all other modern vernaculars, whether Indian or European ; but what is left to us is purely Sanskrita and not foreign, and we may fairly conclude therefore that what has disappeared was likewise Sanskritic, and that the whole system owes its origin to a Sanskrita source. The process has been that of decay and regeneration, and not of development and expansion. History does not afford us an instance of a language growing out of a rude state, developing new forms and gradually acquiring symmetry and perfection, such as the Latin out of the Spanish or the Italian. It is the perfect that wears out and readjusts its members when the first arrangement ceases to be expressive. Hence it is that we find in the Hindvī, as in all other vernaculars, the original inflections losing their power and significance and yielding their places to verbs and participles, which in their turn wear out and assume the form of inflections. It is easy to suppose that the verbs which will most frequently adopt this auxiliary character are those which indicate "to be," "to exist," "to live," "to go." These in Sanskrita are *as*, *bhu*, *sthá* and *gam*, and they therefore constitute the principal auxiliaries in the conjugation of the Hindvī.

The *bhu* of the Sanskrita becomes in the first person singular of the present tense *bhavámi*. In the Gáthá the process which converts *bhu* into *bhava* is partially carried out, and the word becomes *bhomi*. In the Prākṛita the *bhu* changes to *ho* and *huba* and those forms continue in all the Aryan Indian vernaculars. Some think the transition of *bhu* to *ho* to be unnatural and therefore assume it to be a non-Sanskrita word, but, besides the authority of Vararuchi who nineteen hundred years ago wrote down in his grammar the rule* that "in Prakrit *bhu* should be changed to *ho*, and *huba*," we find that notwithstanding the

* *Bhuho ho hubau*. Delius *Radices Prākṛiticæ*, p. 1. *B* and *h* were interchangeable even in the time of the Vedas and in the *Srauta Sutra* of Āśvalāyana, the same word is written at option both *grihīta* and *grihīta*.

use of two thousand years the *ho* in the past tenses of the Braja Bhāshā appears in its primitive form of *bha* in *Bhaye*, *Bhayethe*, &c. The conjugated form of the *ho* in the Prākṛita was *homi*, and in the Hindvī *huñ*. In the definite present this again is intensified by the addition of the past participle *hotá* before it.

The past tense is formed by the past participle *hotá* with the aid of the Sanskrita *sthá* "to remain" changed to *thá*, the personal distinction being indicated by the alteration of the terminal vowel. The perfect is formed by the union of the present participle with the present tense, *huá-hoñ*. This duplication of the verb in the perfect tense is peculiarly Aryan. It occurs in Sanskrita, Greek, Latin, Zend, Anglo-Saxon and Gothic, and is by itself a strong proof in favour of the Sanskrita affiliation of the Hindvī. In the pluperfect the *thá* again occurs as an inflection, the verb remaining in the form of the present participle *huá*. For the future tense the auxiliary is the root *gam* "to go" in the form of *gá* or *ge* added to the verb in the indicative present. This paraphrase is peculiar and not common in any other Sanskritic vernacular. Its analogue in the English may be traced in such phrases as *I am going to do*.

In the case of other verbs *ho* becomes an auxiliary for the perfect, the other tenses being conjugated in the same way as *ho*; it is not necessary, therefore, to adduce examples.

Nor is it necessary to dwell longer on the subject of the grammatical forms of the Hindvī. What has been said will, I trust, be sufficient to shew the strong affinity which it has to the Sanskrita, and the relation it bears to the Prākṛita and the other Aryan vernaculars of India. There are, we admit, breaks in the chain of our evidence, but they are not of such a character as to render the whole untrustworthy. At any rate it will be seen that the Hindvī as it stands, could not have proceeded from any other known language except the Sanskrita, and this sort of negative evidence, in the absence of positive proof, has been recognized in judicature, and may with every reason be adopted in history.

It has been said that inasmuch as the earliest seats of the Brāhmins in India at the time of their advent were occupied by the aborigines, and the two races freely coalesced together, their vernaculars must have, from a very remote period, assumed a mixed character. But the Vedas give us no reason to suppose that any such extensive

admixture did take place. On the contrary it is certain that the aborigines receded as the tide of the Aryan conquerors flowed onward from the north-west, very much in the same way as the Red Indian in North America receded from the contact of the Saxon and the Celt, and they could not therefore leave behind much of their dialects to leaven the language of the aggressors. At the same time as it is impossible for two languages to come in contact without exchanging their vocables, so we find that from 5 to 10 per cent. of the vocables of the modern Aryan vernaculars of India are of non-Sanskrit or Turanian origin. Owing to the same cause the dialects of the aborigines shew a considerable stock of Sanskritic vocables, varying of course in proportion to the extent of intercourse which the different tribes who speak them had with the Bráhmans. When the aborigines had receded beyond the Kṛishṇá, their flight was checked by the sea, and they had accordingly there to make their last stand against their conquerors, and it is beyond the Kṛishṇá, therefore, that we find the descendants of those aborigines in the largest number and in full possession of their original dialects.

After having thus taken, what I trust will appear, a sufficiently consistent view of the origin of the Hindvī, I shall now turn to the *Urdu*, otherwise called the *Hindustání*. Mahomedan writers inform us that the necessity of colloquial intercourse between the Moslem invaders and the natives of this country, produced a mixed dialect of which the grammar was purely Indian, but the vocables partly foreign and partly Indian. It was first principally used by the Affghan soldiery and therefore called the *Urdu* or the "camp dialect." Chiefs and nobles next took it up and it now forms the language of nearly half of the Mahomedan population of the country, the other half speaking the ordinary Hindvī. This sort of fusion of the vocables of one language into another is common enough in the history of languages. To a small extent it is taking place in almost every language on earth; and instances are not wanting to shew that it has happened to a very large extent without affecting in the least the grammatical peculiarities of the recipient. In Bengal the language of the courts contains no less than 30 per cent. of Arab, Persian and other foreign words, and still it is acknowledged to be Bengálí. There is a class of books also in Bengálí which is said to be written in "Mahomedan Bengálí," and some of the Gospels have been translated into it. Its

grammar is pure Bengālī, but it contains no less than 35 per cent. of foreign words. The Persian in the same way, though an Indo-European language, has received a large accession of Semitic element from the Arabs without in the least altering its grammar. Again the Turks, though Turanian by birth, have a language which contains, almost in equal proportion, vocables of Semitic Turanian and Aryan origin. Its grammar nevertheless is purely Tartaric. According to certain missionaries quoted by Hervás* "the Araucans at one time used hardly a single word which was not Spanish, though they preserved both the grammar and the syntax of their own native speech." The English, however, offers the most remarkable instance of a language borrowing its stock of words from a variety of foreign sources without in the least altering its grammar. It is well known that in England, for three centuries after the Norman conquest, the language of court and law, and of elegance and fashion, was French, and nobody was held respectable who did not speak in it. This led to the accession of a large stock of French words into the Saxon, generally estimated at 17 or 18 per cent. and to such a change in the character of the language of the metropolis, that Chaucer doubted that his poetry would be intelligible out of London. But its grammar was left untouched. Omitting all mention of the other foreign elements, the Hebrew, Spanish, Italian, Portuguese, Bengālī, Hindustānī, Malay and Chinese words to be met with in English, I may observe that it has been proved by Thommerel that of the total number of 43,566 words in Webster's dictionary, no less than 29,853 come from classical and only 13,230 from Teutonic sources. And yet the English is not a classical but a Saxon language, and that because English can be written with words entirely Anglo-Saxon, but never by Latin or French words only. The Bengālī of the Mofussil courts in the same way may have 30 per cent. of foreign words, but those words by themselves can never construct an intelligible sentence. Hence the great axiom in the science of language "that grammar is the most essential element, and therefore the ground of classification in all languages which have produced a definite grammatical articulation."† Applying this rule to the Urdu, we find that in Hindvī there are several works which contain but a small admixture of foreign element. Insha Alla Khan wrote a tale in the so-called Urdu, which does not contain a

* Apud Max Müller, *Science of Language*, p. 76. † Max Müller, *loc. cit.*

single Persian or Arabic word,* and the largest extent to which Semitic element has been traced in any Urdu work does not exceed 40 or at the outside 50 out of every hundred.† While on the other hand its remaining 50 to 60 per cent. of vocables are Hindvī, and its structure and grammar are entirely so, and that to such an extent that it is impossible to construct a single sentence in it without the aid of the Hindvī grammar. Pedantic Mauluvis may string together endless series of adjectives and substantives and even adverbs, but they can never be put in concord without indenting on the services of Hindvī verbs, Hindvī inflections, Hindvī case-marks, Hindvī pronouns and Hindvī prepositions. Nothing could be more conclusive than this; the grammar of the Urdu is unmistakably the same as that of the Hindvī, and it must follow therefore that the Urdu is a Hindvī and an Aryan dialect. A variety no doubt it is, differing from the original in having a large admixture of foreign element, but still a variety of the Hindvī, as the Assamese and the Coch are varieties of the Bengālī. Englishmen who maintain that 200 per cent. of Latin and Greek do not alter the Saxon origin of their vernacular will, I am sure, readily admit my position, and if this be admitted the question as to the character in which it should be written becomes self-evident. As Sanskritic dialects the Hindvī and the Urdu have undoubted claims to the Nāgarī, for that alone can supply the necessary symbols properly to indicate their system of sounds. The Persian alphabet has no such symbols and therefore fails adequately to represent the phonology of the Hindvī, except by the aid of a cumbrous system of diacritical marks. It is besides, notwithstanding the great facility with which it may be written, to quote the language of the learned translator of Ferishta, “the most difficult to decipher with accuracy, and the most liable to orthographical errors. In writing it the diacritical points, by which alone anything like certainty is attainable, are frequently omitted; and in an alphabet where a dot above a letter is negative, and below the same letter is positive, who shall venture to decide in an obscure passage which is correct, or how is it possible that a person unacquainted with the true orthography of proper names can render a faithful transcript of a carelessly written original?”‡

It is true that owing to a feeling of national pride on the part

* Ante, vol. xxi. p. 1. † Vide Appendix. ‡ Brigg's Ferishta, p. xi.

of the Mahomedan rulers of India, and partly to the inconvenience and trouble on their part of learning a foreign alphabet, the bulk of the literature of the Urdu is now written in the Persian character, which cannot now be changed, and there are certain Arabic and Persian letters, such as ذ ز ع غ ق which have not their counterparts in the Nāgarī ; but these facts cannot, I contend, invalidate the right of a language to the use of its own native alphabet. In importing foreign words, the rule has hitherto been to assimilate them to the language into which they are imported, and not to invent a new alphabet for their sake ; the Greeks did not add to the number of their letters when they met with new letters, such as *j*, in the language of their neighbours, but represented them by their nearest equivalents in their own alphabet, and the same course should be, and in fact has hitherto been, adopted in writing the Hindvī.

But whether it be proper to write the Hindvī in the Nāgarī or the Persian characters, certain it is, on the arguments so ably set forth by Capt. Lees, that the Roman alphabet is by no means adapted fairly to represent its system of sounds.

The question is one of great importance. It has already engaged the attention of some of the most distinguished scholars of Europe,* and it would be presumptuous on my part to dispose it off at the sag end of an article on a different subject. But as a native who feels deeply interested in the prospect of the vernaculars of his country, I cannot allow this opportunity to pass, without observing that the question has been hitherto discussed mainly, if not entirely, from an European stand-point. The benefits which European scholars, officials and missionaries are to derive by substituting the Roman characters in their writing and printing of Indian dialects, are what have been most elaborately discussed, but little consideration has been shewn as to the advantage which the natives are to derive by accepting the Roman as a substitute for their national alphabet. It is from

* It is worthy of note that Sir William Jones, Gilchrist, Wilson and some others whose names are intimately associated with schemes of Romanising, were not advocates for converting all native writing into the Roman character for natives, but for supplying a uniform plan for representing foreign words in European languages for the use of European scholars. Dr. Max Müller's system is also avowedly intended for Europeans. It is called the "Missionary Alphabet," and Christian Missionaries in foreign parts are the principal persons who are expected to benefit by it. Even Lepsius looks to Missionaries for his principal supporters.

that point, therefore, that I wish to discuss the question here. I have not the least objection to the adoption of a uniform system for the reproduction of foreign words in European languages. On the contrary I think, for Englishmen in India, such a system is most urgently needed, as much for the sake of convenience and precision—"to avoid the chaos of caprice"—as for the researches of philologists; and I have always advocated it to the best of my humble powers.

Philologically considered, sounds are all that are of importance in a living language, and therefore it is perfectly immaterial what are the shapes of the symbols which indicate them; and if it can be shewn that one set offers advantages in writing and printing as well as in precision, over another, considerations of antiquity or national vanity ought not to stand in the way of improvement. But as the case stands, while the Roman alphabet is without question highly defective both in its arrangement and in the range of sounds which can be expressed by it, the Sanskrita has been acknowledged by competent scholars to be the most perfect of all known systems of letters, and the proposition therefore amounts to the substitution of an avowedly inferior in place of a superior alphabet. It is true that the Nágari letters are angular, and in cursive writing must yield the palm of superiority to the Roman, but facility in writing is not the only nor the most important requirement of a good alphabet. Besides, the Roman, notwithstanding its superiority, is in this respect far from being perfect. It is utterly unsuited for the purpose of reporting public speeches, and various systems of short-hand writing have had to be devised for that work. For ordinary rapid writing, such as taking down depositions, the Bengálí and the Persian have been found in our Courts quite as good for the Bengálí and the Urdu languages as the Roman for the English, and the proposed change therefore is uncalled for, particularly when we bear in mind that the Roman letters cannot be used in writing the oriental languages without a multitude of dots and dashes and accents and commas, which completely neutralise its cursive superiority. In the standard alphabet of Lepsius, there are no less than 189 letters, of which the first *a* appears under nine disguises, produced by dots and dashes and hooks and spurs above, below and by the sides. The *d* in the same way has nine, *e* thirteen, *i* nine and *u* twelve disguises. To such an extent has this process of accentuation been carried with regard to the other letters that we

find but a few that have escaped its metamorphosing influence, and no less than 165* letters heavily loaded with excrescences. Several of those letters are Greek and others oblique and horizontal lines with diacritical marks which had never before been made to do duty for letters, except in some systems of stenography. These are surely not recommendations by way either of simplicity or precision, the two most important requirements of a good alphabet, and hence it is, that the use of the standard alphabet has proved so troublesome in the Cape Colony.† The Roman has only two diacritical marks, the dot on the *i* and the score on the *t*, and both these are unmanageable in rapid writing; to multiply them a hundred-fold, and still to expect that the alphabet would remain simple and easy of writing, is to expect what experience has already proved to be, an impossibility. Mr. J. G. Thompson of Madras once suggested "An unpointed Phonetic alphabet based upon Lepsius' Standard alphabet, but easier to read and write; less likely to be mistaken; cheaper to cast, compose, correct and distribute, and less liable to accident;" but unfortunately for his scheme, his letters were distorted and disproportioned, and so metamorphosed by hooks and loops and spurs that they could not at all be recognised as Roman. Other systems there are, but none free from diacritical marks, nor of so uniform a character as to be generally understood all over Europe. It has been said that when the Roman alphabet becomes familiar to the Indians, it will not be necessary to retain the use of the points, and by their omission, writing will be free and easy. But the proposition amounts to writing a language without vowels, and the mischief of such a course in writing generally, and in most legal proceedings particularly, must be frightful to contemplate.‡ The experiment has been tried already and found to break down completely. The *Kūṭidī* Hindvī is written in characters

* It is necessary to note that these are all distinct simple letters and not compound consonants and vowel marks of the Sanskrit alphabets, with which some Romanisers wish to confound them. The Sanskrit is a syllabic alphabet, and therefore every letter or combination of letters represents a complete syllable with its necessary vowel, whereas the Roman, being a literal alphabet, has to put in a separate letter for every sound both consonantal and vocalic that occurs in a syllable, and most of them when used for oriental languages have to receive their special diacritical marks above and below.

† Professor Max Müller declines to give in his adhesion to Lepsius' system.

‡ It has been said that since the Persian, a diacritical alphabet, has been so long in use, the Roman is not likely to prove more troublesome. But the object of the proposed change should be to give us a good alphabet instead of a bad one, and not to substitute a defective one by another equally bad.

closely allied to the ordinary Nāgarī, but without *mātrās* or vowel marks, and in this state it is perfectly unintelligible to all except the initiated. Its use is therefore confined exclusively to drafts and cheques, and even there, for the sake of precision, the sums have to be written with such circumlocution as “rupees twenty, the double of which is forty and quadruple, eighty, and the half of which is ten and quarter, five.” It is said that once a *gomāstā* wrote in it from Agra to his master’s family at Muttra, stating that his master was gone to Ajmere and the big ledger was wanted. The words used were

Bābu Ajmir gaye baḍī bahī bheja dijiye.

Without vowel marks and written continuously without breaks in the native fashion, the words were read---

Bābu aj mar gayī baḍī bahī Bheja dijiye.

“Master is dead, send his wife,” apparently either to perform a suttee, or attend the funeral obsequies. The story may be false, but I firmly believe that the mistake it is intended to ridicule, will multiply many fold, if Indian languages be written in the Roman characters without diacritical marks.

One great argument in favour of introducing the Roman characters in India, is the uniformity of sounds which will be secured to the whole country. But the argument is based on a fallacy. Sounds are regulated by the condition of our vocal chords, and as those chords must change in their tension, elasticity and power, with every change of climate, human organs of speech cannot produce the same sounds with equal facility everywhere. Hence it is that the Roman characters have no uniformity in Europe. They differ in almost every different country. The alphabet of England is not the alphabet of France, nor is the alphabet of France that of Germany, Sweden or Russia. In each of those countries, the same letters are very differently pronounced, and the difference is greatly increased when they coalesce into words. Further, they do not retain the same sounds in all positions. Their natures and powers vary, and they become hard or soft, long or short, sounding or mute, with reference to the natures of their neighbours, and hence a constant source of difficulty presents itself in their use. This is well illustrated in the pronunciation of Englishmen and Frenchmen. The two races use the same alphabet borrowed from one common source, and yet such is the force of *genius loci* on sounds, that Englishmen find the greatest difficulty in

pronouncing French words correctly, and the Frenchman is rare who can speak English like an Englishman. It is to obviate this difficulty and secure uniformity in spelling and reading, that the "Phonetic System" has been originated in England, and Ellis, Pitman and others are trying to supersede the Roman characters altogether. This problem of phonetic reform involves questions of mathematics, physiology, and acoustics, besides those of convenience, easy writing, and economy of printing, which I cannot undertake to discuss. The system that will satisfy all the requirements of the different languages that we have to deal with, remains yet to be devised, and until that is done it would be too hasty to take up the proposition in connexion with the Indian dialects. The advocates of the phonetic system, who are making such rapid strides in England, will, ere long, do away with the present arbitrary and puzzling English orthography, and then will be the proper time to think of romanizing the Indian vernaculars. At present the want of uniformity of the Roman characters in the different countries of Europe, has led to many dissimilar and often contradictory systems of romanising; and since every one of them is more or less defective, their introduction in vernacular writing in India, where we have to deal with several distinct nationalities having many peculiar sounds of their own, cannot but prove most troublesome and vexatious. These sound, even when stereotyped by a number of diacritical marks, will still remain peculiar, and be quite as unintelligible as foreign letters to an ordinary European scholar. No language unaffected by physical causes can borrow sounds. Centuries of the Norman conquest failed to force French sounds into English organs of speech,* and it is impossible therefore to suppose that the European languages will ever receive foreign sounds for the sake of a few diacritical marks: and if they will not, where is then the uniformity for which we are to sacrifice all the Indian dialects? If the familiar English *c*, the emblem at different times of *s*

* Perhaps the real cause of the arbitrary character of the English alphabet is due to the adoption of the Roman letters by the Saxons for a Teutonic language, the sounds of which they could not represent without assuming other than the sounds which had been originally assigned to them. Hence it is that the Latin dentals *t* and *d* have become cerebrals in English, the latter having no *t* and *d* sound at all. Translating from the English, a great number of foreign names are, in the vernaculars, written with cerebral *t* and *d* when they should be represented by dentals. A ridiculous instance of this occurs in a Bengali novel where an aping Young Bengal is made to call his father টোটারাম্ ডই instead of তোতারাম দই.

and *k*, is to read as *ch*, and our *ch* to become something very different, it would be a delusion to talk of uniformity and universality. Admitting for the sake of argument, that foreign sounds can be naturalised in Europe, in order to familiarise them to Europeans, it would be necessary first to remove the ordinary Roman alphabet from European Primers, and supply its place by a standard one, be it of Lepsius, Max Müller or some other; and when it becomes universal in Europe, then to apply it in writing the Indian dialects, so as to render the latter easily readable by every body, and the alphabet identically the same everywhere. But as no European nation will learn 189 characters instead of 26, and that simply for the possible need of learning a foreign language, the plan cannot but appear quixotic in the extreme. Besides, some of the sounds of native languages are so peculiar, that to know them correctly, the language in which they occur must be learnt, and he who has the leisure and inclination to learn a foreign language will never find its alphabet a stumbling block. If he cannot learn the alphabet, he is never likely to learn the language. There is no system of alphabet on earth which cannot be mastered in a couple of hours, and which would not become perfectly familiar in a month; but there is not a language that I know of, which the greatest linguist could acquire with sufficient accuracy for purposes of ordinary conversation, in six months.

Much stress was laid at the last meeting upon the natives of the Peninsula being separated from each other by a number of alphabets, and rendered incapable of mutual intercourse, and on the advantage that would accrue to them by having a common alphabet. But I feel certain that the evil pointed out would not yield to the remedy proposed. We find that while in Northern India, the Hindus with their Nāgarī and the Mahomedans with their Persian, meet with no difficulty in carrying on familiar intercourse, the Englishman with his Roman character common to all Europe must starve in a provincial hotel across the channel, if he knew not that bread in French was *pain*. What is wanted therefore is a common language, and not a common alphabet. The latter even when attained, can, at best, but gratify a fancy—that of ideal uniformity, while the former would be a positive good, and come home to the business and bosom of all who attain it.

No discussion on the value of an alphabet in the present day can be complete without reference to its adaptability to printing. I wish

therefore to say a few words on the subject, though I claim no especial knowledge of that art. It has been repeatedly said that the Roman letters occupy less space, and are more easily composed, more lasting, less liable to breakage, and consequently more economical than any other known class of letters, and if these could be proved to be facts, a strong argument no doubt would be made in its favour. But I am afraid the advocates of the Roman alphabet have come to their conclusion, without making sufficient enquiry. I have been assured by several respectable printers, and I know from personal knowledge, that the cost of composing in Sanskrita and Bengálí types is much lower than that of setting up Roman letters; and that the lasting quality of the former compared to that of the latter, is as 2 to 1. The Rev. C. B. Lewis of the Baptist Mission Press, assures me that "the English type soonest shows signs of wearing out. This arises from the more delicate outline of a nicely cut Roman and Italic type—and especially from the scriffe of the letters *i. e.* the fine line at the end of each stroke of *b p u s*. When this line is worn off, the Roman letter, even if otherwise good, has a very ancient decayed look." As regards breakage, the Roman type has great advantage over the Nágari, but this advantage is entirely negatived by its wearing out much faster than the latter. On the whole therefore the balance of advantage is in favour of the oriental type and against the Roman. Nor is this compensated by any saving of space through the slinness of the Roman letters. I have a volume by me, containing a prayer by the Armenian patriarch Saint Nersetis Clajensis, translated into thirty-three different languages, and also separate pamphlets containing translations of the same into Sanskrita, Bengálí and Burmese. The translations in German, Hebrew, Turkish, Arabic, Persian, Syriac, Chaldee, Ethiopic, Malayan, Burmese and Chinese are given in large type: the rest in type very nearly alike. These books therefore offer valuable data* for ascertaining the extent of space which a given quantity of matter takes up in different type, and on examining them, I find that the Roman is inferior to the Greek, Sanskrita,

* The following list shows the number of pages which the prayer takes up in the different languages. Armenian 13 pages, Greek 12, Latin 13, Italian 15, French 13, Spanish 14, Lusitanian 16, German 15, Dutch 14, Swedish 14, Danish 13, Icelandic 13, Greenlandic 14, English 14, Hibernian 14, Celtic 16, Wallachian 14, Russian 14, Polish 15, Illyrian 13, Servian 13, Hungarian 14, Iberian 22, Turkish 13, Persian 16, Arabic 15, Hebrew 14, Syriac 17, Chaldee 31, Chinese 25, Ethiopic 23, Malayan 20, Malayalam 21, Burmese 12, Sanskrita 12, Bengálí 12.

Bengali and Burmese, and that if the Semitic letters be reduced to the same face, as that of the Long Primer or the Bourgeois, they would far surpass the Roman in compactness. No doubt the natives of this country, accustomed to manuscripts for ages, are fond of large types, as were the natives of Europe two or three centuries ago; but already the people of Bengal have taken to Bourgeois and Brevier in Bengali, and the same will soon follow in the Nágari and the Persian. It is possible that Bengali types, as generally used, with the vowel marks cast in separate pieces and the lines leaded out, take, face for face, a little more space than the Roman, but while this disadvantage may be easily obviated by mechanical means, the superiority of the Roman on this account is so small, that it cannot at all make up for the defects which have been set forth above.

As a question of policy it would not be proper for our present Government—the most liberal and tolerant that India ever had—to force the introduction of the Roman character into our schools and courts. One great cause of complaint in Poland, Hungary, Schleswig-Holstein and Austrian Italy is the attempt on the part of the conquerors to force their languages on the subject races, by introducing them into the courts of those countries, and a similar course in India, even if confined to the alphabet alone, will, I apprehend, prove a like source of discontent. The Hindus regard their alphabet to be of divine origin (Deva Nágari) and a gift from the Godhead. With it is associated their religion, their literature, and their ancient glory. To touch it is to meddle with their religion, their past greatness and their cherished recollections. In the case of Austria, Russia and Denmark there is some advantage in prospect. It is a prerogative of Government and a source of power to use its own mother-tongue in the courts established by it, though the main object of dispensation of even-handed justice may not thereby be fully attained. The people of India could understand the object of introducing the English language into our courts, though they would feel the injustice of sacrificing the interest of the million for the convenience of a few officials. But they cannot but think it a gratuitous and vexatious interference with their language, to force upon them an alphabet which is avowedly unfit to represent its system of phonology, and that merely for the sake of an idea. Give them what is good for them, and they will receive it with thankfulness. Offer them the English language and

they will learn it with all their might and main, for they know it enables them to have intercourse with their governors, and opens the way to wealth and power ; but they cannot perceive that changing their own ancient and superior alphabet for a defective one, can do them any good, and they will have none of it. The interference of Government in such a case cannot but prove mischievous, for were the Government even to confine its patronage of the Latin character to printing vernacular books in it and giving them a wide circulation, it would still displease its subjects, for, preternaturally suspicious as they are, they cannot but look upon such a measure as an act of antagonism against their ancient literature, while it will divert to a useless channel a portion of the limited resources of the education department. The Germans are more highly civilized and more intelligent than any modern Asiatic race, and yet they have, up to this time, notwithstanding the experience of centuries, failed to appreciate the superiority of the slim Roman to the cumbrous German type. The Hindus cannot but prove infinitely more obtuse. It has been said that a patriotic feeling for their ancient characters prevents the German from adopting the Roman letters. If so, (and most probably it is so,) how much stronger must that feeling be in the Hindus in favour of the alphabet in which is preserved their ancient and much revered Vedas, and which is the repository of all their correspondence, accounts and title-deeds. Teach the Roman character in our vernacular village schools, and you will teach what the pupils will be most anxious to unlearn, for it cannot help them at all in the affairs of their lives for centuries to come, nor keep them *au courant* with the rest of their countrymen. For my part I believe, with Sir Erskine Perry, that " were a legislative enactment to insist, even under penalty of death, upon the use of the Roman character, it could not convert our banias' accounts to round German text." ' .

Grand no doubt is the idea of a universal alphabet and grander still is that of a universal language, but the curse of Babel is still upon us, and neither the one nor the other is practicable.

POSTSCRIPT.

I take this opportunity to express my entire concurrence in the opinion expressed by Capt. Lees, on the reading of my paper in August last, as to the number of non-Hindvi or foreign words trace-

able in the Urdu. My estimate of 40 to 50 out of every hundred was founded upon the ordinary run of Urdu books, and is not applicable to the style of some of the works patronised by the late effete courts of Delhi and Lucknow. The percentage of foreign words in those books, is, I readily admit, much higher. But at the same time it will be seen from the subjoined extract from the *Sarúr e Sultáni*, the book to which Capt. Lees particularly drew my attention, that it is not so excessively great as to affect much my general conclusion. I add an extract from the *Fisháneh Ajááb* which also belongs to the highly Persianised class of writings of the *Sarúr e Sultáni*, and the relative proportion of Hindvī and foreign elements in it appears to be as 62 to 38; in the first named book it is 57 to 38, i. e. 60 and 64 per cent. respectively. My quotations are, I must acknowledge, taken at random, and there are passages in both the works which are much more Persianised, while there are others which are less so; but on the whole they may be, I believe, taken as fair average specimens, as the facts they yield correspond very closely with the results of my enumeration and classification of the words of several pages of each of the two works. To be exact, it would be necessary to count and classify all the words that occur in them, and even then no satisfactory conclusion could be drawn, owing as much to my own limited knowledge of the Semitic languages as to the doubtful origin of many of the words. It is even likely that my division of the Hindvī and foreign words in the short extracts given below will be questioned, but that will not, I believe, alter my position, for I do not depend so much upon the relative proportion of the two elements of the Urdu, as upon its structure and grammar, which I contend is purely Hindvī. The verbs *hai, thá, huá, geyá, dekhe, sunke, &c.*, in the extracts are all without exception Hindvī; the case affixes *ke, ká, ki, son, men, &c.*, are likewise Hindvī, and so are the pronouns and prepositions, *apne, uoh, se, tak, kiá, &c.* Take away those case-affixes, verbs and prepositions, and the sentences will crumble down and cease to be sentences. It would not be elegant to say in English "the bouleversing of the *escritoire* created quite a sensation in the *boudoir* of the *Mademoiselle*;" but similar sentences are not rare in first class periodicals and novels, and they afford a fair example of what the Urdu is. Their construction and grammar are English, and though we may call them Galli-

cised we cannot say they are French. No Frenchman would for a moment recognise them as such. English rhetoricians, no doubt and very justly, condemn them, but still they admit them to be English and quote them as specimens of English. Following them, we may call the Urdu, *Persianised* Hindvī, but still Hindvī and not Persian. In the four Mahomedan Bengálí books, from which extracts are given below, the number of foreign words appear to be quite as large as in the ordinary run of Urdu books, and yet those books are described by their authors to be Bengálí, and translated from the Persian and Urdu expressly for the people of Bengal. Virtually their language is as much the Urdu of Bengal, or Bengálí Urdu, as the Urdu is the Hindvī Urdu, or the Urdu of the North-West. If they be taken for distinct languages, I see no reason why the anglicised Hindvī in which Englishmen in India say,

E 1 E 2 H 1 E 3 E 4 H 2

“*bearer couchká sámne álmárime pantaloón rakkho,*”

a new language. In it we find no less than four European and only two Hindvī words. Similarly the Bengali of our courts, which contains twenty per cent. of English words, would have a fair claim to a distinct rank. The language of Young Bengal again is a patchwork of English nouns and Bengálí verbs, and yet nobody has thought of calling it a distinct language. And if they are not distinct languages, but corruptions and dialectic varieties of one language, the Urdu can hold no higher position.

The colloquial Urdu of the masses contains a smaller admixture of foreign words than the written Urdu, and Capt. Lees is of opinion that it is a distinct dialect independent of the Urdu of our books; to it he applies the term Hindustání. But the principle of this subdivision is open to grave objection. Pressed to its legitimate end, it would justify our dividing every living language into not only two distinct dialects, the written and the colloquial, but to as many dialects as there are orders and ranks of people.

Extract from the Surúr Sultání, p. 11.

F 5	F 4	H 4	H 3	H 2	H 1	F 3	F 2	F 1
جوشن	زره	گلایا	لوه کو	تیز	تھا	طبیعت کا	اولوالعزم	جمشید
H 13	H 12	H 11	H 10	H 9	F 7	H 8	F 6	H 7
بنایا	ریشمی	کپڑا	الجاد	کیا	رعیت کو	شاد	کیا	جس
								جگہ زمین

F 12 H 18 H 17 F 11 H 16 F 10 H 15 H 14 F 9 F 8
 قابل زراعت دیکھی پانی کا چشمہ پایا خلق کو بسایا دیو محکوم
 F 16 H 23 H 22 H 21 F 15 F 14 F 13 H 20 H 19
 تھ اونسے عمارت مستحکم ایوان محل سراپختہ بنوائی ادمیوں کو
 F 22 F 21 H 27 H 26 F 20 F 19 F 18 H 25 H 24 F 17
 ترکیب سکھائی تخت مرصع جواہر نگار نیار ہوا شروع سال کا
 F 23 H 36 H 35 H 34 H 33 H 32 H 31 H 30 H 29 H 28
 نو روز نام ہوا جشن کا سرانجام ہوا جب تخت پر جلوس
 H 45 H 44 H 43 H 42 H 41 F 25 H 40 H 39 F 24 H 38 H 37
 کرے جہانکا عزم ہوتا دیو بروئی ہوا تخت اورا لیجاتے ہاتھوں
 F 27 H 50 F 26 H 49 H 48 H 47 F 46
 ہاتھ پہنچاتے سات سی برس سلطنت کی مگر فردوسی دریں
 F 29 F 28 H 51
 سال ہنقصد ہمیں رفت کار ندیدند مرکہ اندران روز کار • یکایک بادۂ بخوت
 H 54 F 35 H 53 F 34 F 33 F 32 H 52 F 31 F 30
 کا دماغ میں جوس ہوا دفعۂ خود فراموس ہوا عبدیت بھولا
 57 F 38 F 37 H 56 H 55 F 36
 معبودی کا دعوی کیا شیطان نے رسوا کیا

Extract from the Fisaneh Ajáeb, p. 7.

F 6 F 5 H 6 H 5 H 4 F 4 H 3 H 2 F 3 H 1 F 2 F 1
 سبحان الله و بحمدہ عجب شہر گلزار ہی • ہر گلی کوچہ دلچسپ
 H 17 F 9 H 16 H 15 F 8 H 14 H 13 H 12 F 7 H 11 H 10 H 9 H 8 H 7
 باغ و بہار ہی • ہر شخص اپنے طور پر قطعدار ہی • دوروبہ بازار
 F 13 H 22 H 21 F 12 F 11 H 20 H 19 H 18 H 18
 کس انداز کا ہی • ہر دوکان میں سرمابۂ ناز و نیاز کا ہی • ہر چند
 F 15 H 30 H 29 F 14 H 28 H 27 H 26 H 25 H 24 H 31
 ہر محلے میں جہان کا ساز و سامان مہیا ہی • پر اکبری
 H 38 F 19 H 37 H 39 F 18 F 17 H 35 H 34 H 33 F 16 H 32 H 32 H 31
 دروازے چلو جائے اور پکے پل تک کہ صراط مسقیم ہی • کیا جلسا ہی
 H 41 F 26 H 40 F 25 F 24 F 23 F 22 F 21 H 39 F 20
 نان بائی خوش سلیقہ شیر مال کباب نان نہاری جہان کی نعمت اس
 H 47 F 31 F 30 H 45 F 29 H 44 H 43 F 28 H 41 F 27
 ابداری کی جسکی بو باس سے دل طاقت پائے دماغ معطر ہو جائے •

H 54 H 53 F 34 H 52 H 51 F 33 H 50 H 49 H 48 F 33 F 32
 فرسته گذرے نورسونگہ • کیساہی سیر ہو ذرۂ تدبیر ہودیکے سے
 H 56 H 55
 بہوک لگ آے •

The following is an extract from the *Iblisnámeh* (p. 1.) The total number of words in it is 58, of which 35 are Bengálí and 23 foreign. Its grammar is pure Bengálí.

F 1 F 2 F 3 B 1 B 2 F 4 B 3 B 4 F 5 B 5 B 6
 পহেলাতে বেছমেলা, শুরু করি নামে আল্লা, দে নামে ছেপ্ত শুন ২ ভাই।
 F 6 F 7 B 7 F 8 F 9 B 8 B 9 B 10 B 11 B 12
 আমেল ফাজেল তারে, এরবিত্তে তরজমা করে, মুখলোকে তাহা বোঝেনাই ॥
 B 13 B 14 F 10 B 15 B 16 B 17 B 18 B 19 B 20 B 21
 শুন ভাই বেরাদরি, একারণে বাঙ্গালা করি. লেখি আমি বুঝিবার তরে।
 F 11 F 12 B 22 B 23 B 24 B 25 F 13 F 14 B 26 B 27
 আরবি ফারছির তরে, কেছনা বুঝিতে পারে, সোকর ছেফত বলে করে ॥
 F 15 F 16 B 28 F 16 F 17 F 18 F 19 B 29 B 30 F 20
 আল্লার ছেফত যত, খোড়া এরছা হকিকত, কেতাব মত করিজে বয়ান।
 F 21 • F 22 B 31 B 32 B 33 B 34 B 35 F 23
 মুরসিদের ছবুমমতে, অব্বাকে বুঝাইতে, পুথি করি বাঙ্গালা জোবান ॥

The following is from the *Kíámatnámeh* (p. 2). The number of Bengálí words in it is 36, that of foreign 16.

B 1 B 2 F 1 B 3 F 2 B 4 " F 3 F 4 B 5 F 5
 নাজানি কেমন তেদ আছে কেয়ামতে। কি রূপে হাসর খাড়া হবে আখে-
 B 6 F 6 B 7 B 8 B 9 B 10 B 11 B 12 B 13 B 14
 রেতে ॥ বাঙ্গালা জবানে যদি কেহ কহে ভাই। আপনা চক্ষেতে দেখ মনকে
 B 15 F 7 F 8 " B 16 B 17 B 18 F 9 B 19 B 20 B 21
 বুঝাই ॥ এরছাই ভালস লোগ করে যেথাসেখা। কাহেনি করিয়া কেহ না
 B 22 F 10 B 23 B 24 F 11 F 12 B 25 B 26 B 27
 করে কবিভা ॥ জাহানে অনেক আছে লায়ক কাবেল। বাঙ্গালা করিতে কার
 B 28 F 13, F 14 B 29 F 15 B 30 B 31 B 32 B 33 B 34
 নাহি ফিরে দেল ॥ লোকের খাহেস দেখে ভাবে মনেমনে। কেমনে হইবে
 B 35 B 36 F 16
 পুথি বাঙ্গালা জবানে ॥

The *Chahárdurvish*, p. 2, which has an admixture of 16 foreign in every 40 Bengali words, proclaims itself to be current Bengálí, translated into it in order that it may be easily understood by the Bengálí public.

চলিত বাঙ্গলায় তাই করিনু তৈয়ার। সকলে বুঝিবে তাই কারণ ইহার ॥

Kázi Safi-uddín, in his preface to the *Kilas ul ambid*, says

এহাতে নবি ও পরগল্পরানের কেছা কোরান সরিফ ও হাদিছ হইতে ছা-
বেত আছে, এক্ষণে এহাকে বাঙ্গলা ভাষায় তরজমা করাইয়া বহুত খরচ
করিয়া ছাপাইতেছি।

"It contains accounts of prophets and messengers according to the holy Koran and the Hadith, and now I, having got it trans-
lated into Bengálí, print it at a great cost."

The language of the translator, Reza-ullah, will be illustrated by the following extract, in which we have 17 foreign for every 24 Bengálí words.

B 1	F 1	B 2	B 3	F 2	F 3	F 4	B 4	B 5
শুন হো মোমিন ভাই করিয়া খেয়াল। আখেরে সাফৎ জাঁর হইবে								
F 5	F 6	F 7	F 8	F 9	F 10	F 11	B 6	B 7
নেহাল॥ মহাম্মদ মোস্তা নবি আলায় হেছালাম। পরগল্পরী হৈল তাঁর								
B 8	F 12	F 13	F 14	B 9	B 10	B 11	B 12	F 15 B 13
উপরে তামাম॥ নবুৎ দরিয়াতে সেই মোতি ভারী। লেখিতে ছেফত তাঁর								
B 14	B 15	B 16	B 17	F 16	B 18	B 19	B 20	B 21 B 22
আমি কিবা পারি। আপনা নুরেতে জারে আপে নিরঞ্জে। প্রথমে করিয়া								
F 17	B 23	B 24						
পয়দা রাখিল গোপনে ॥								

EMENDATIONS.

P. 498, line 4. For "i, u and ri" read "i, u and neuter nouns in ri."

P. 498 line 7. For "singular number of words ending in other than a is as," read "plural number is bhyas."

